



13 April 2021

New London Architecture (NLA) response to '[The Future Buildings Standard](#)' consultation

This consultation response is made by New London Architecture (NLA), the independent centre for London's built environment, which brings together professionals, politicians and the public to shape a better city. Our membership includes over 600 organisations across the public, private and charitable sectors, and represents a broad base of built environment professionals, from the development community, to local authorities, planners, architects and others.

This response focuses on the implications of the proposed Future Buildings Standard on London's ambition to become zero carbon by 2030 and the ability of the built environment sector to support this ambition. The consultation been led by the NLA Expert Panel on Net Zero.

Question 1):

Our aim is that buildings constructed to the Future Buildings Standard will be capable of becoming carbon neutral over time as the electricity grid and heat networks decarbonise.

Do you agree that the outline of the Future Buildings Standard in this chapter meets this aim?

a) Yes

b) No

Please explain your reasoning and provide supporting evidence or alternative suggestions.

The proposal to be net zero relying on the decarbonisation of the grid and heat networks is welcome but it doesn't go far enough. The introduction of an interim upgrade to Part L in 2021 is long overdue, and so is the new future building standard by 2025. But they fall short of the expectations for 2050. A roadmap with future targets should be proposed. LETI, for instance, has created a net-zero roadmap that can be a basis for achieving net-zero carbon by 2030.

Buildings must be designed to reduce energy, avoid reliance on active systems, result in reduced carbon emissions and at the same time provide comfort and wellbeing to occupants. The decarbonisation is welcome but new buildings must not heavily rely on it to reach the net zero target.

In addition, the current methodology only considers regulated energy. Therefore, an expectation to be net-zero carbon now is not unrealistic. The Great London Authority (GLA) and London Boroughs have current policies for developments to be net-zero carbon, with a minimum 35% reduction carbon emissions beyond current baseline. It is acknowledged that because of the standard assessment metrics, the notional building references and the updated carbon factors, this comparison is not straight forward, but the overall ambition seems to be lower with the preferred option only requiring for the interring Part L upgrade a reduction of 27% emissions against current levels.

Factual reductions must be firstly associated with the predicted at design versus real energy consumption and industry benchmarks and only then converted to carbon emission savings based on carbon factors published in the assessment. These carbon factors should be updated on a more regular basis, to reflect the decarbonisation of the grid.



The new Future Buildings Standard should be more ambitious to also consider the ‘unregulated energy’ and a metric that can be easily comparable with the metered energy in kWh. The ‘energy in use’ metric proposed by LETI and endorsed by industry (e.g. RIBA) is a better solution that can be in the short term compared with benchmarks and in post construction monitoring with the real consumption.

The proposed new primary energy metric is confusing and will skew the real improvements to be made at a building level. While it is understood that this metric may be a result of the EPBD directive and allows a macro comparison it should not be the basis for improvement of building regulations.

Setting a target for annual delivered energy (kWh/m²/yr), measured by the energy meter, would be a more appropriate energy performance target than primary energy. This keeps it simple. Primary energy is more complex and can’t easily be measured.

Question 2): We believe that developers will typically deploy heat pumps and heat networks to deliver the low carbon heating requirement of the Future Buildings Standard where practical. What are your views on this and in what circumstances should other low carbon technologies, such as direct electric heating or hydrogen, be used?

The shift from less efficient systems, that rely on energy derived from fossil fuels (e.g. boilers on natural gas) to heat pumps and DEN on renewable energy and/or on a decarbonised electricity supply is welcome. However, particular care needs to be taken to avoid and increase in the fuel cost, which can aggravate fuel poverty.

Direct heating should be allowed in buildings that are well designed to have very low/ positive energy consumption (e.g. passiv or active haus).

Equally hydrogen, or possible low carbon technologies that may emerge in the foreseen future should not be currently excluded, and innovative solutions that can deliver carbon savings in a cost-effective way should be promoted. But a significant government infrastructure investment on the development, reliable and safe delivery of supply is needed. Hydrogen may also play an important role in the transition from natural gas-based boilers to hydrogen.

Question 3): Do you agree that some non-domestic building types are more suitable for low carbon heating and hot water, and that some non-domestic building types are more challenging?

- c) ☒ Yes
- d) ☐ No

If you answered no, please explain your reasoning.

Question 4): Do you agree with the allocation of building types to space and water heating demand types, as presented in Table 2.1 of this consultation document?

- e) ☒ Yes
- f) ☐ No

If you answered no, please explain your reasoning, including how different



building types should be allocated.

Question 5):

We would like to introduce the Future Buildings Standard for all buildings as quickly as possible. When do you think the Future Buildings Standard should introduce low carbon *space heating* for buildings with Type 1 or Type 2 demand (buildings that have space heating demand more suitable for heat pumps)?

- a) 2025 – our proposed date
- b) Another date (please specify)

Please explain your reasoning

As soon as possible. It could be in alignment with the interim Part L 2021-22. To express a serious commitment to tackling carbon emissions and set an achievable timeframe for zero carbon.

Question 6):

We would like to introduce the Future Buildings Standard for all buildings as quickly as possible. When do you think the Future Buildings Standard should introduce low carbon *space heating* for buildings with Type 3 demand (buildings that have space heating demand less suitable for heat pumps)?

- a) 2025
- b) Another date (please specify)

Please explain your reasoning.

Question 7):

We would like to introduce the Future Buildings Standard for all buildings as quickly as possible. When do you think the Future Buildings Standard should introduce low carbon *water heating* for buildings with Type 1 or Type 3 demand (buildings that have water heating demand more suitable for point-of-use heaters or heat pumps)?

- a) 2025 – our proposed date
- b) Another date (please specify)

Please explain your reasoning.

As soon as possible. Low carbon technology is already available and can be increasingly developed if the building regulations do so. This would express a serious commitment to tackling carbon emissions and set an achievable timeframe for zero carbon.

Question 8):

We would like to introduce the Future Buildings Standard for all buildings as quickly as possible. When do you think the Future Buildings Standard should introduce low carbon *water heating* for buildings with Type 2 demand (buildings that have water heating demand less suitable for point-of-use heaters or heat pumps)?

- a) 2025
- b) Another date (please specify)



Please explain your reasoning.

While it is acknowledged that some types of non-domestic buildings will face more constraints to implement low carbon solutions for heating and DHW, it is important that all are implemented at the planned starting date.

Besides the industry shortage of qualified installers and the associated supply chain, it is important to also consider constraints associated with the refurbishing and upgrade of systems in existing buildings, which can have an aggravated cost but also compatibility issues with the local infrastructure. Provision should be made for both the creation of incentives and reliable mechanisms and solutions that can make the transition to low carbon cost effective and feasible for most cases.

Question 9): **We would welcome any further suggestions, beyond those provided in this consultation, for improving the modelling process; Part L and Part F compliance; and the actual energy performance of non-domestic buildings. Please provide related evidence.**

Public non-domestic buildings (depending on size and type and function) already have the requirement to produce Display Energy Certificates (DEC) that are based on energy audits post construction. These are also the basis for normalised industry benchmarks in kWh/m²/yr for various building types (see CIBSE benchmarks TM46, Guide F or online tool). These should be more thoroughly used to compare with predictions at the design stage, ideally undertaken with dynamic simulation but could be further explored to upgrade simplified methodologies (SBEM) and NCM databases. Irrespectively, the metrics need to include all predicted energy uses (regulated and unregulated) to allow a comparison to real consumption in use.

It is understood that there are various variables that can contribute to the 'performance gap' currently verified in most buildings surveyed. But software limitations, the consultant user knowledge of the tool to reduce errors or non-representative weather files should be minimised. Larger buildings and developments already adopt thermal dynamic modelling to estimate energy use and dimension the capacity of the systems. Further requirements to compare not with a notional building but with a benchmark of a similar building class could form the basis for the predicted performance and later more easily comparable with the DEC's to be produced.

The proposed 'be seen' planning policy recently implemented by GLA to major developments could be reproduced in a similar manner for commissioning and post construction auditing and reporting.

Lastly, embodied carbon metrics and benchmarks (e.g. RICS, future GLA) should start to be introduced in building regulations as a future metric that encompasses the whole life cycle of buildings. These could be in the initial interim upgrades for Part L and FBS as a complement to the Energy in Use, EIU, metric and serve as a metric to report the future carbon emission reductions associated with the building.

To clarify the proposed metrics to be adopted should be:

- FEES or similar to identify and promote passive solutions (e.g. reduce heat gain and losses via envelope and infiltration and promote/prevent solar gains depending on season) as a first approach
- EUI – Energy Use Intensity, kWh per annum and kWh/m² to compare with benchmarks and converted to Carbon emissions for annual reporting
- WEC – Whole Embodied carbon – including all stages of the life cycle (based on BS 15978) and estimated for a defined period (e.g. 60 years or less for temporarily constructions)

Question 10): **What level of uplift to the energy efficiency standards for non-domestic buildings in the Building Regulations should be introduced in 2021?**



- a) Option 1 – average 22% CO₂ reduction
- b) Option 2 – average 27% CO₂ reduction (this is the Government's preferred option)
- c) No change
- d) Other level of uplift (please specify)**

Please explain your reasoning and provide supporting evidence or alternative suggestions where applicable.

Option d) at least 35% CO₂ reduction.

This is the minimum target that the GLA and boroughs in London have already adopted as part of the net-zero carbon policy for non-domestic buildings since 2016. The policy is applicable to major development i.e. above 1000m² but some boroughs, namely the London borough of Hackney has a similar policy also for minor non-development.

GLA has commissioned some publications: 'Driving energy efficiency through the London Plan', Buro Happold for GLA 2017; 'GLA Energy Efficiency Target Development Case Studies', AECOM for the Greater London Authority 2017. They highlight that a significant reduction in energy efficiency is realistic and around 15% is cost effective and achievable for most non-domestic buildings. UKGBC, Framework and Net zero carbon: energy performance targets for offices, 2020, confirm a similar trend.

Setting the intermediate for part L at 27% would still be seen as not ambitious and not enough to support the commitments made in climate emergency declarations.

A problem with setting building carbon reduction targets rather than energy consumption targets is that decarbonisation of the grid allows a lot of the reduction to be delivered by the energy supply system rather than the building design. Setting delivered annual energy targets (measured in kWh/m²/yr) would help drive energy efficiency in buildings rather than allow over reliance on decarbonisation of the grid.

Question 11): Do you agree with the way that we are proposing to apply primary energy as the principal performance metric?

- a) Yes
- b) No**

If you answered no, please explain your reasoning.

Primary energy has its merits, and allows a comparison between different buildings. It is also the metric recommended by the EPBD certification. However, it is very difficult to relate to the end-use consumption. Approved Documents, namely Part L should be assessed on the grounds of the energy use by the building that can be easily related to the energy meter. So an Energy in Use metric would facilitate the real time consumption (with smart meters) and the reporting of the energy.

Question 12): Do you agree with using CO₂ as the secondary performance metric?

- a) Yes**
- b) No

If you answered no, please explain your reasoning.



Yes a performance metric, but instead of being estimated based on a comparable performance it should be a much simpler method. Some that can more easily relate to real energy use.
This will allow the gathering and reporting of Carbon emissions reductions on an annual basis.

Question 13): Do you agree with the approach to calculating CO₂ and primary energy factors, referred to in paragraph 3.5.7 of this consultation document?

a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence or alternative suggestions.

Proposed factors seem already outdated and should long term forecast. Energy consumption or energy intensity targets are simpler and can be measured at the meter.

Question 14): Do you agree with the proposals for natural gas being assigned as the heating fuel for any fuels with a worse CO₂ emission factor than natural gas?

a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence or alternative suggestions.

Question 15): Do you agree with our proposal of using a hybrid electric/heat pump heating system in the notional building when electricity is specified as a heating fuel?

a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence or alternative suggestions.

Question 16): Do you agree with the proposal for the treatment of domestic hot water in the notional building?

a) Yes

b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

If there is an interest to promote low carbon technologies (e.g. heat pumps) then gas should be avoided in the notional building. Using HPs will create significant carbon emission savings in comparison with the baseline, that could be seen as 'overly rated' and not pursuing better efficiency of HPs and fabric efficiencies improvements.



Question 17): Do you agree with the proposal for connecting to an existing heat network, as presented in the draft NCM modelling guide?

- a) Yes**
- b) No, they give too much of an advantage to heat networks
- c) No, they do not give enough of an advantage to heat networks
- d) No, I disagree for another reason

If you answered no (b, c or d), please explain your reasoning and provide supporting evidence or alternative suggestions.

Question 18): Do you agree with the proposal for connecting to a new heat network, as presented in the draft NCM modelling guide?

- a) Yes**
- b) No, they give too much of an advantage to heat networks
- c) No, they do not give enough of an advantage to heat networks
- d) No, I disagree for another reason

If you answered no (b, c or d), please explain your reasoning and provide supporting evidence or alternative suggestions.

DEN should be prioritised in areas with one or planned in the near future.

Question 19): Do you agree with the proposed changes to the National Calculation Methodology Modelling Guide and activity database?

- a) Yes
- b) Yes, but additional changes should be made**
- c) No

If you answered b or c, please explain your reasoning and provide alternative suggestions.

The efficiency of the envelope should be more ambitious.

More emphasis should be given to the form factor of the building instead of a comparison with a building with the same form and tighter parameters. This allows creativity and design and possible

While it is welcome that overheating is to be considered as a separate approved document, more emphasis should be given to the cooling hierarchy and promoting passive solutions. Shading and obstructions from the actual building and neighbours can aggravate the heating loads but may reduce the cooling loads to levels where an active system may not be required. The adoption of shading coefficients for movable shading devices should be considered for estimating the overall solar transmittance on both heating and cooling season.



More consideration must be made to the impact of daylight (only currently included in the LENI calculation). Part L should oversee the holistic approach that addresses the impact daylight has on the reduction of the energy use but also on overheating and well-being of the occupant. Minimum daylight levels as proposed in BS 17037 (2018).

Question 20): We would welcome any further suggestions for revising the outputs from SBEM, which would enable easier checking by building control on building completion. Please provide related evidence.

Start considering embodied carbon as metric in complement to the Energy in use. Both can be converted to Carbon Emissions equivalent. The Energy in use metric can be reported and compared with meter readings. Reporting could be included in annual sustainability reports and published online or made available to visitors.

Proposed photographic evidence associated with key phases of construction is welcome but more documentary evidence of the proposed systems at the design and completion phase (maybe similar to methods adopted at BREEAM) would allow better compliance.

Question 21): Do you agree with the proposals for limiting heat gains in non-domestic buildings?

- a) Yes
- b) No, they go too far
- c) No, they do not go far enough**
- d) No, I disagree for another reason

If you answered no (b, c or d), please explain your reasoning and provide alternative suggestions.

U-values should be lower - more ambitious (e.g glazing).

G-value should be modified when shading is present (e.g. use shading coefficients)

Air tightness should be tighter but still allow flexibility to design with natural ventilation.

Buildings with mechanical ventilation heat recovery (MVHR) systems should have air tightness levels of no worse than 2-3 m³/hr per sqm at 50 Pa in order to be effective. This is recommended by the Air Tightness Testing and Measurement Association (ATTMA).

The regulations should therefore acknowledge the advantage of good airtightness and MVHR. Refer to article in CIBSE Journal <https://www.cibsejournal.com/technical/closing-the-gaps-creating-a-joined-up-approach-for-ventilation-and-energy-regulations/>

Question 22): Do you agree with the proposed minimum standards for fabric performance in new non-domestic buildings as presented in Table 3.2 of this consultation document?

- a) Yes
- b) No, the standards go too far
- c) No, the standards do not go far enough**
- d) No, I disagree for another reason

If you answered no (b, c or d), please explain your reasoning and provide supporting evidence or alternative suggestions.



The fabric efficiency should aim to reduce the carbon emissions by 15% for non-domestic. This is in alignment with the energy hierarchy, specifically the 'be lean' stage under GLA London Plan.

Question 23): Do you agree with the proposed minimum standards for fabric performance of new thermal elements in existing non-domestic buildings as presented in Table 3.3 of this consultation document?

- a) Yes
- b) No, the standards go too far
- c) No, the standards do not go far enough**
- d) No, I disagree for another reason

If you answered no (b, c or d), please explain your reasoning and provide supporting evidence or alternative suggestions.

Retrofitting existing buildings is fundamental to the success of the whole carbon emissions reductions. Requirements for the fabric should be significantly improved, where feasible, and more consequential improvements for the existing parts of new extensions.

Question 24): Do you agree with the draft guidance in paragraph 4.15 of the draft *Approved Document L, volume 2: buildings other than dwellings* on reducing unwanted air infiltration when carrying out work to existing non-domestic buildings?

- a) Yes
- b) No**

If you answered no, please explain your reasoning.

The proposal to improve the airtightness is welcome, but the proposed target is not too demanding and fairly lower than current values achieved after renovations. Consequential improvements to other parts of the building should also be required.

Question 25): Do you agree that the limiting U-value for rooflights in new and existing non-domestic buildings should be based on a rooflight in a horizontal position, as detailed in paragraph 4.4 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**
- b) No

If you answered no, please explain your reasoning.

Question 26): Do you agree that we should adopt the latest version of BR 443 for calculating U-values in new and existing non-domestic buildings, as detailed in paragraph 4.1 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**



b) No

If you answered no, please explain your reasoning.

Question 27): Do you agree with the newly proposed minimum efficiencies for natural gas, oil and LPG boiler and domestic hot water system installations in new non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No, the standards go too far

c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning

Question 28): Do you agree with the proposed set of standards for air distribution systems for new non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No, the standards go too far

c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning.

Question 29): Do you agree with the proposals for self-regulating devices for new non-domestic buildings, as set out in Sections 5 and 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 30): Do you agree with the minimum efficacy proposals for lighting in new non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No, the standards go too far

c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning.

With the wide dissemination of LED lighting, the luminous efficacy has increased. Higher efficiencies should be required. The reference to the CIBSE SLL handbook is welcomed.



Question 31): Do you agree with the proposals for cooling in new non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes
- b) No, the standards go too far
- c) No, the standards do not go far enough**

If you answered no (b or c), please explain your reasoning.

Cooling demand based on CIBSE Guide A. More opportunities to include shading and modify the design to minimise unwanted heat gains and promote dissipation of heat trapped indoors.

Question 32): Do you agree with the proposals to require building automation and control systems in new non-domestic buildings, when such buildings have a heating or air-conditioning system over 290kW?

- a) Yes
- b) No, a different trigger point should be used**
- c) No, I do not agree that building automation and control systems should be required in new buildings
- d) No, I disagree for another reason

If you answered no (b, c or d), please explain your reasoning and provide alternative suggestions. Please also highlight any unintended consequences that may result from setting this standard.

290kW seems a fairly high capacity. Controls should also be adopted in smaller scale buildings, to promote better building management and target carbon savings.

Question 33): Do you agree with the technical specification for new building automation and control systems as EN 15232, Class A?

- a) Yes**
- b) No, the requirements go too far
- c) No, the requirements do not go far enough

If you answered no (b or c), please explain your reasoning.

Question 34): Do you agree with the proposals for improving the commissioning guidance for new non-domestic buildings in Section 8 and 9 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**
- b) No, the standards go too far
- c) No, the standards do not go far enough
- d) No, I disagree for another reason

If you answered no (b, c, or d), please explain your reasoning and provide



alternative suggestions.

Question 35):

Do you agree with the proposals for requirements relating to the assessment of overall energy performance of building services installations and providing information to building owners for new non-domestic buildings given in sections 8 and 9 of *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes
- b) No

If you answered no, please explain your reasoning.

Question 36):

Do you agree with the guidance proposals for adequate sizing and controls of building services systems in new non-domestic buildings, as detailed in Sections 5 and 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes
- b) No, I do not agree with providing guidance on this
- c) No, the guidance should be improved

If you answered no (b or c), please explain your reasoning.

Question 37):

Do you agree with the proposal that wet space heating systems in new buildings should be designed to operate with a flow temperature of 55°C or lower?

- a) Yes, through a minimum standard set in paragraph 5.9 of the *Approved Document L, volume 2: buildings other than dwellings*
- b) Yes, through carbon and primary energy credit in SBEM
- c) Yes, by another means
- d) No, the temperature should be below 55°C
- e) No, this standard should not be applied to all new buildings
- f) No, I disagree for another

reason Please explain your reasoning.

55°C should only be acceptable in existing buildings where constraints limits the adoption of lower temperatures:

- Lower temperature will increase the performance of systems (e.g. HP)
- Lower temperature will reduce the risk of overheating due to unwanted losses in pipes
- Legionella control is avoided if there are no storage, therefore not a reason to increase temperature. There are other methods for avoiding legionella growth including the provision of hot water cylinders with local electric top-up heating, UV treatment and chemical treatment.

Question 38):

Do you agree with the proposals to clarify, rationalise and simplify the



guidance for building services in new non-domestic buildings, and to incorporate the standards of the Non-Domestic Building Services guidance into the main body of the *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Useful information and guidance will be lost.

Question 39): Do you agree with the proposals to simplify the requirements in the Building Regulations for the consideration of high-efficiency alternative systems in new non-domestic buildings?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 40): Do you agree with the efficiency proposals for replacement fixed building services in existing non-domestic buildings as detailed in paragraphs 5.4 to 5.7 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 41): Do you agree with the newly proposed minimum efficiencies for natural gas, oil and LPG boiler and domestic hot water system installations in existing non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No, the standards go too far

c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning.

Question 42): Should minimum boiler efficiency standards in existing non-domestic buildings still benefit from relaxations through the use of heating efficiency credits?

a) Yes, boiler installations should continue to benefit from heating efficiency credits



- b) **No, boiler installations should no longer benefit from heating efficiency credits** (the Government's proposal)

If you answered yes, please explain your reasoning.

Question 43): Do you agree with the proposed set of standards for air distribution systems for existing non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) **Yes**
b) No, the standards go too far
c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning.

Question 44): Do you agree with our proposed approach and guidance to mandating self-regulating controls in existing non-domestic buildings, including technical and functional feasibility, as detailed in Sections 5 and 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) **Yes**
b) No

If you answered no, please explain your reasoning.

Question 45): Do you agree with the minimum efficacy proposals for lighting in existing non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes
b) No, the standards go too far
c) **No, the standards do not go far enough**

If you answered no (b or c), please explain your reasoning.

Luminous efficacy should be higher, i.e. at least 90 lm/circuit-watt

Question 46): Do you agree with the proposals for cooling in existing non-domestic buildings in Section 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes
b) No, the standards go too far
c) **No, the standards do not go far enough**

If you answered no (b or c), please explain your reasoning.



Opportunities to explore and implement technologies and/or passive solutions that mitigate but also allow adaptation should be given more thought. Buildings should be more prepared to be more resilient to the effects of climate change and/or Urban Heat Island in city centres. To adopt the cooling hierarchy from GLA.

Question 47): Do you agree with the proposals that when Building Automation and Control System is installed in an existing non-domestic building with a heating or air-conditioning system over 290 kW, it should meet the same minimum standards as new non-domestic buildings?

- a) Yes**
- b) No, a different trigger point should be used
- c) No, a different standard should be used
- d) No, for another reason

If you answered no (b, c or d), please explain your reasoning and provide alternative suggestions.

Question 48): Do you agree with the proposals for requirements relating to the assessment of overall energy performance of building services installations and providing information to building owners for existing non-domestic buildings?

- a) Yes**
- b) No, I do not agree with providing this guidance
- c) No, the guidance should be improved

If you answered no (b or c), please explain your reasoning, including any further suggestions.

Question 49): Do you agree with the guidance proposals for adequate sizing and controls of building services systems in existing non-domestic buildings, as detailed in Sections 5 and 6 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**
- b) No, do not agree with providing this guidance
- c) No, the guidance should be improved

If you answered no (b or c), please explain your reasoning.

Question 50): Do you agree with the proposal that when whole wet space heating systems (i.e. boiler and radiators) are replaced in existing non-domestic buildings the replacement system should be designed to operate with a flow temperature of 55°C or lower?

- a) Yes, through a minimum standard set in paragraph 5.9 of *Approved Document L, volume 2: buildings other than dwellings*
- b) Yes, through carbon and primary energy credit in SBEM



- c) Yes, by another means
- d) **No, the temperature should be below 55°C**
- e) No, this standard should not be applied to all existing buildings
- f) No, I disagree for another

reason Please explain your reasoning.

Reduce the risk of overheating.

Increase the efficiency of heat pumps.

Lower temperatures imply lower heating demand to reach the desired setpoint.

Question 51): Do you agree with the proposals to restructure the guidance for building services in existing non-domestic buildings, and to incorporate the standards of the Non-Domestic Building Services guidance into the main body of the *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**
- b) No

If you answered no, please explain your reasoning.

Question 52): Do you agree the Government should continue to provide guidance for minimum building services efficiencies in existing non-domestic buildings, if the standard does not go significantly further than the Ecodesign regulations?

- a) Yes**
- b) No, the Ecodesign regulations are sufficient
- c) No

If you answered no (b or c), please explain your reasoning.

Question 53): Do you agree with the changes made to simplify, rationalise and clarify the guidance, and the updates to external references in Appendix E and Appendix F, in *Approved Document L, volume 2: buildings other than dwellings*, as outlined in paragraph 3.12.1 of the consultation document?

- a) Yes**
- b) Yes, but not with the changes to the supplementary guidance
- c) Yes, but not with the external references
- d) No

If you answered no, please explain your reasoning. Please do not repeat comments on the changes made to simplify, rationalise and clarify the guidance for Building Services which you have already provided under Questions 38, 51 and 52.



Question 54): Do you agree that the measures in Tables D.1 and D.2 of Appendix D of *Approved Document L, volume 2: buildings other than dwellings* are likely to be technically, functionally and economically feasible under normal circumstances?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 55): Do you agree with the proposals for relaxation factors for modular and portable buildings, as detailed in Tables 2.2 and 2.3 of draft *Approved Document L, volume 2: buildings other than dwellings*?

a) Yes

b) No, the requirements go too far

c) No, the requirements do not go far enough

If you answered no (b or c), please explain your reasoning and provide supporting evidence or alternative suggestions.

Question 56): Do you think that the Pulse methodology should be an approved means of demonstrating airtightness for non-domestic buildings?

a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence.

Question 57): Do you agree that we should adopt an independent approved airtightness testing methodology such as the CIBSE draft methodology for non-domestic buildings?

a) Yes, and the CIBSE methodology is appropriate

b) Yes, but with a methodology other than CIBSE

c) No, an independent approved airtightness methodology shouldn't be adopted.

If you answered no, please explain your reasoning.

Question 58): Do you agree with the proposal for guidance on the calibration of devices that carry out airtightness testing in new and existing non-domestic buildings?

a) Yes

b) No



If you answered no, please explain your reasoning and provide alternative suggestions.

Question 59): Do you agree with the proposed approach to energy sub-metering, as detailed in Section 5 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**
- b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 60): Do you agree with the proposed approach to energy forecasting, as detailed in paragraph 9.4 of draft *Approved Document L, volume 2: buildings other than dwellings*?

- a) Yes**
- b) No, I do not agree with the proposed approach
- c) No, energy forecasting should not form part of the Building Regulations

If you answered no (b or c), please explain your reasoning and provide alternative suggestions.

Question 61): Do you agree with the proposals for transitional arrangements for buildings other than dwellings?

- a) Yes**
- b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 62): Do you agree with the proposed guidance in Section 1 and Section 2 of *Approved Document F, volume 2: buildings other than dwellings* on minimising the ingress of external pollutants and on the proper installation of ventilation systems in non-domestic buildings?

- a) Yes**
- b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 63): Do you agree with the proposed guidance for reducing noise nuisance for ventilation systems in non-domestic buildings?

- a) Yes**



b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 64)

Do you agree with the additional guidance provided in paragraphs 1.18 to 1.26 of the draft *Approved Document F, volume 2: buildings other than dwellings* on the installation of ventilation systems?

☒ a) Yes

b) No

If you answered no, please explain your reasoning.

Question 65):

Do you agree that the guidance in Appendix B of the draft *Approved Document F, volume 2: buildings other than dwellings* provides an appropriate basis for setting minimum ventilation standards?

☒ a) Yes

b) No

If you answered no, please explain your reasoning.

Question 66):

Do you agree with the list of industry guidance presented in Section 1 of draft *Approved Document F, volume 2: buildings other than dwellings*?

☒ a) Yes

b) Yes, but additional guidance should be provided

c) No

Please explain your reasoning and where relevant provide alternative suggestions for guidance.

Question 67):

Do you agree with the list of references to industry guidance presented in Appendix C and Appendix D in the draft *Approved Document F, volume 2: buildings other than dwellings*?

☒ a) Yes

b) No, the Government should amend the list of references

c) No, for another reason

If you answered no (b or c), please explain your reasoning and provide alternative suggestions.



Question 68): Do you agree with the proposals to simplify, rationalise and clarify the Approved Document guidance in *Approved Document F, volume 2: buildings other than dwellings* as outlined in paragraph 4.3.7 of the consultation document?

- a) Yes**
- b) No

If you answered no, please explain your reasoning and provide alternative suggestions

Question 69): Do you agree that purge ventilation in offices should be designed to provide at least four air changes per hour?

- a) Yes
- b) No, this standard goes too far
- c) No, this standard does not go far enough**

If you answered no (b or c), please explain your reasoning and provide alternative suggestions.

Concerns associated with covid 19 and the ability to quickly purge air in an area should require more than 4ch/h. See CIBSE and RHEVA publications on the subject.

Question 70): Do you agree with the guidance for the ventilation of car parks and offices, as detailed in Section 1 of *Approved Document F, volume 2: buildings other than dwellings*?

- a) Yes**
- b) Yes, but some improvements can be made
- c) No, the guidance should be significantly changed

If you answered b or c, please explain your reasoning and provide alternative suggestions. Please note that the appropriate questions on measures to prevent the spread of infection are detailed in section 4.4 of this consultation document.

Question 71): Do you agree with the proposals in Section 3 of draft *Approved Document F, volume 2: buildings other than dwellings*, when replacing an existing window with no background ventilators?

- a) Yes**
- b) No, the standards do not go far enough
- c) No, the standards go too far

If you answered no, please explain your reasoning and provide alternative suggestions.



Question 72): Do you agree with the proposal to provide a completed commissioning sheet to the building owner and associated guidance in Section 4 of draft *Approved Document F, volume 2: buildings other than dwellings*?

a) Yes

b) No

Question 73): Do you agree with requiring increased capacity of 50% within new ventilation systems in offices shown in paragraph 1.38 of the draft *Approved Document F, volume 2: buildings other than dwellings*?

a) Yes

b) Yes, but with qualifications

c) No, the standard is too high

d) No, the standard is too low

e) No, I disagree for another reason

If you answered b, c, d or e, please explain your reasoning.

Question 74): Do you agree with the proposed standards for provision of outdoor air for offices, shown in paragraphs 1.35 to 1.36 of draft *Approved Document F, volume 2: buildings other than dwellings*?

a) Yes

b) Yes, but with qualifications

c) No

If you answered b or c, please explain your reasoning.

Question 75): Do you agree that extract ventilation in bathrooms, WCs, and other sanitary accommodation should be capable of operating in a continuous mode if necessary?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 76): Do you agree with the proposal for indoor air quality monitoring in offices as outlined in paragraphs 1.39 to 1.41 of draft *Approved Document F, volume 2: buildings other than dwellings*?

a) Yes

b) Yes, but with qualifications

c) No

If you answered b or c, please explain your reasoning and provide any



suggestions for guidance if applicable.

Important for where air-borne virus can pose a risk to occupants.

Question 77): If applicable, please provide any suggestions for guidance for indoor air quality monitoring (e.g. CO₂ monitoring) in non-domestic buildings.

See guidance from well standard.
Also REHVA and CIBSE for Covid 19.

Question 78): Do you agree with the proposals for systems that recirculate air as outlined in paragraph 1.46 of draft *Approved Document F, volume 2: buildings other than dwellings*?

- a) Yes
- b) No

If you answered no, please explain your reasoning.

Question 79): Do you agree with the proposed minimum ventilation standard in occupiable rooms in all types of non-domestic buildings where singing, loud speech or aerobic exercise may take place, where low temperature and low humidity environments may exist, or where members of the public may gather in large groups? These are outlined in paragraphs 1.27 and 1.28 of draft *Approved Document F, volume 2: buildings other than dwellings*.

- a) Yes
- b) Yes, with qualifications
- c) No

If you answered b or c, please explain your reasoning and provide any suggestions for guidance if applicable.

Question 80) Do you think the mitigating measures to protect against infection via aerosols would be suitable for any non-domestic buildings other than those stated in the Approved Document guidance?

- a) Yes
- b) No

If you answered yes, please explain your reasoning and provide evidence to support this.

Question 81): How should the Government address the overheating risk?

- a) Through a new requirement in the Building Regulations and an Approved Document, as proposed in this consultation
- b) Through Parts L and F of the Building Regulations



- c) Through government guidance
- d) I have an alternative approach
- e) It isn't an issue that needs addressing

Please explain your reasoning and provide alternative suggestions where applicable.

The subject is of major importance to justify its own Approved Document. However, more references should also be made in Part L and F.

Question 82): Do you agree with the buildings that are in scope of this new part of the Building Regulations?

- a) Yes
- b) Yes, but they should be expanded to include more building types and/or existing buildings
- c) No, they should be reduced to only include flats and houses
- d) No, I disagree for another

reason Please explain your reasoning.

It is welcome that overheating is to be assessed in new residential buildings, including institutional and others that mainly have a residential activity (e.g. care homes, hall of residence). However, existing dwellings are also at risk of overheating and guidance should also be provided. This is especially important when upgrades are made.

Likewise, overheating should be checked in most other buildings without active systems for cooling and based on the similar criteria from CIBSE TM52 (2013).

Lastly, buildings that have air conditioning results may be shown as percentages above the threshold temperature, or in terms of predicted mean vote (PMV) and percentage of people dissatisfied (PPD) to identify if the system is well designed to provide comfort cooling (CIBSE guide A, 2015).

All buildings relying on air conditioning, should also be firstly assessed without the system active with CIBSE TM 52 or 59 (non-domestic and domestic, respectively) to identify possible strategies to mitigate the risk to mitigate with passive strategies avoiding reliance on active cooling systems.

More clarity should be given to the weather files to be used (TRY vs DSY). Guidance on adopting recognised weather files to be used (CIBSE TM49:2014) and also using proposed future weather files based on the latest climate change projections (Climate Impacts Programme UKCIP and Exeter University).

Question 83): Do you agree that the division of England based on overheating risk detailed in paragraph 5.6.3 of this consultation document is correct?

- a) Yes
- b) No, there should be one area
- c) No, there should be more areas

If you answered no (b or c), please explain your reasoning and provide supporting evidence.

The option of separating London from other areas should be further expanded to include other city centres or dense areas in England that may be subject of hotter events and/or with significant urban heat island, UHI.



Question 84): Do you agree with the categorisation of buildings into Group A and Group B as detailed in paragraph 5.6.5 of this consultation document?

a) Yes

b) No

If you answered no, please explain how buildings should be re-categorised.

Question 85): Do you agree with the simplified method as a means of compliance with the proposed new requirement to reduce overheating risk?

a) Yes

b) No, the method should be more sophisticated

c) No, the method is too easy to pass

d) No, for another reason

If you answered no (b, c or d), please explain your reasoning and provide supporting evidence.

The simplified method should allow some ranking of the risk of overheating.

Early stage overheating risk tool from the Good Homes Alliance could be adopted instead of the proposed checklist.

Question 86) Do you agree with the maximum glazing area and shading standards for limiting solar gains in the simplified method as detailed in paragraphs 1.6 to 1.9 of the draft *Overheating Approved Document*?

a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence.

It is important that the area of glazing is associated with the floor area of the adjacent space (or volume) to better understand of the ability to cope with higher temperature. The ratio of glazing vs area of the façade is also useful to estimate the flux of energy that is transmitted to the inside, and relates well with methods adopted in simplified assessments. Criteria should include limiting percentage for both cases and in association with the orientation of the windows and characteristics of the glazing (g-value) and shading.

Not clear why for great London group B has an higher percentage of glazing ratio than group A as the former seems to be at a higher risk of overheating. Also, there is no significant difference in the criteria to apply between the two groups. Group B also includes single sided dwellings, and they are at a significant risk of overheating if oriented E/S/W.

Question 87) Do you agree with the approach to removing excess heat in the simplified method as detailed in paragraphs 1.10 to 1.13 of the draft *Overheating Approved Document*?



a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence.

General principle of providing openable windows is recommended.

The use of 'glazing area' and 'free area' without knowing the actual window size can lead to misinterpretation. Not clear how the 'free area' in 1.10 must be "12% of the floor area, If the glazing area is less than 13% of the floor area". What if the window that contains a glazing area is less than say 10%?

Question 88):

Do you think that adequate levels of daylight will be provided and that homes will be acceptable to purchasers while meeting these proposed standards?

a) Yes

b) No

Please explain your reasoning.

BS 17037:2018 'Daylight in Buildings' provides criteria to assess and design spaces for good daylight. It also proposes two methods; one simplified based on the daylight factor and a second for illuminance level at a reference plane using climatic data and adequate time steps dynamic simulations.

There is a clear missed opportunity to propose a new approved document for overheating and not cross check the proposals with daylight.

Spaces with windows with reduced size, with low g-values, that often have low visible transmittance, are likely not well lit and will depend more on artificial light. An increase of internal gains associated with lighting is expected, aggravating the risk of overheating, but also an increase in the energy consumption.

Question 89):

Do you agree with offering dynamic thermal analysis as a means of compliance with the proposed new requirement to reduce overheating risk?

a) Yes, as described in the draft *Overheating Approved Document*

b) Yes, but not as described in the draft *Overheating Approved Document*

c) No

Please explain your reasoning and provide alternative suggestions where applicable.

The adoption of TM59 for assessing the risk of overheating in dwellings is welcome. This method has been used as part of the requirements in energy assessments for planning applications in London Authorities. It has recognisably identified solutions at design stages that would be more difficult to implement/be costly at later stages. Overall it has promoted a more thorough assessment of overheating where emphasis is sometimes put on other aspects.



But because the implementation is relatively new it should avoid small variations in terms of assumptions to those included in TM59 to avoid confusion at planning and compliance and duplicate the assessments.

Question 90): Please detail any information you have about the likelihood of occupants opening doors and windows at night in unoccupied rooms.

Question 91): Do you agree with the proposed acceptable strategies for shading and the removal of excess heat, when following the dynamic thermal analysis method, as found in Section 2 of the draft *Overheating Approved Document*?

- a) Yes, I agree with both sets of acceptable strategies**
- b) Yes, but with amendments to the acceptable shading strategies
- c) Yes, but with amendments to the acceptable strategies to remove excess heat
- d) Yes, but with amendments to both sets of acceptable strategies
- e) No, I do not agree with the acceptable strategies

Please explain your reasoning and provide any suggested amendments where applicable.

Question 92): Do you agree that the overheating standard should not account for the effect of curtains, blinds and tree cover?

- a) Yes, curtains, blinds and tree cover should be excluded
- b) Yes, but only curtains and blinds should be excluded
- c) Yes, but only tree cover should be excluded
- d) No, none of these should be excluded**

If you answered b, c or d, please explain your reasoning.

Not assuming the use of internal shading devices (eg. curtains and blinds) will defy the purpose of proposing these as possible solutions to reduce the risk of overheating.

Tree canopies are more difficult to assess due to the nature of each tree element and maturity. It may therefore be acceptable to exclude them from the calculation at this stage.

Question 93): Do you agree that the building should be constructed to meet the overheating requirement without the need for mechanical cooling?

- a) Yes**
- b) No

If you answered no, please explain your reasoning.

Question 94): Do you agree with limiting noise in new residential buildings when the overheating strategy is in use, and the proposed guidance in Section 3 of the draft *Overheating Approved Document*?



- a) Yes**
- b) Yes, but with amendments to the guidance
- c) No, I do not agree with limiting noise when the overheating strategy is in use

If you answered b or c, please explain your reasoning and provide alternative suggestions.

Question 95): Do you agree with minimising the ingress of external pollutants when the overheating strategy is in use, and that the external pollutants guidance in *Approved Document F, volume 1: dwellings* should be followed where practicable?

- a) Yes**
- b) Yes, but with amendments to the guidance
- c) No, I do not agree with minimising the ingress of external pollutants when the overheating strategy is in use

If you answered b or c, please explain your reasoning and provide alternative suggestions.

Question 96): Do you agree with the proposals on security in Section 3 of the draft *Overheating Approved Document* in new residential buildings?

- a) Yes**
- b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 97): Do you agree with the protection from falling guidance proposed in Section 3 of the draft *Overheating Approved Document*?

- a) Yes
- b) No**

If you answered no, please explain your reasoning and provide alternative suggestions.

Too restrictive. Will prevent sufficient flux of air to enter the space.

Question 98): Do you agree with the guidance on protection from entrapment proposed in Section 3 of the draft *Overheating Approved Document*?

- a) Yes
- b) No**

If you answered no, please explain your reasoning and provide alternative suggestions.



Question 99): Are there any further issues which affect usability that should be included in the *Overheating Approved Document*?

- a) Yes**
- b) No

Please explain your reasoning and provide supporting evidence.

Types of openings. Also if they allow some passive stack ventilation (openings at the bottom and top).

Question 100): Do you agree with the proposed requirement to provide information on the overheating strategy to the building owner?

- a) Yes, I agree with the requirement, the list provided and that this should be within a Home User Guide**
- b) Yes, I agree with the requirement, but think that the list provided should be changed or that this should not be provided within a Home User Guide
- c) No, I do not agree with providing information

Please explain your reasoning and provide alternative suggestions where applicable.

Question 102): Do you agree that this guidance on limiting the effects of heat gains in summer, in both Approved Document L guidance for new dwellings and SAP Appendix P, can be removed?

- a) Yes
- b) No**

If you answered no, please explain your reasoning.

It is important to reiterate the problem associated with pipes. This is even more relevant for higher temperatures

Question 103): Should the transitional arrangements that apply to the overheating requirements align with the proposed transitional arrangements for Part L and F 2021 for new dwellings, as described in paragraph 5.10.2 of this consultation document?

- a) Yes**
- b) No

Please explain your reasoning and provide alternative suggestions where applicable. If you answered no, please also propose an alternative reasonable period that could apply.



Yes they should be adopted as soon as possible.

Question 104): Do you agree with the proposed minimum fabric standards for existing domestic buildings set out in Table 6.1 of this consultation document?

a) Yes

b) No

If you answered no, please explain your reasoning and provide supporting evidence.

Could have been more ambitious.

Question 105): Do you agree with the draft guidance in section 4 of the draft *Approved Document L, volume 1: dwellings* on reducing unwanted air infiltration when carrying out work to existing homes?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 106): Do you agree that we should control the primary energy and fabric energy efficiency of new extensions to existing homes when using the SAP method of compliance?

a) Yes

b) No

If you answered no, please explain your reasoning.

Compliance should be based on real benchmarks and predicted in use/real metering.

Question 107): Do you agree that the limiting U-value for rooflights in existing domestic buildings should be based on a rooflight in a horizontal position, as detailed in Section 4 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 108): Do you agree that we should adopt the latest version of BR 443 for calculating U-values in existing domestic buildings, as detailed in Section 4 of draft *Approved Document L, volume 1: dwellings*?

a) Yes



b) No

If you answered no, please explain your reasoning.

Question 109):

Do you agree with the proposed minimum fabric standards set out in Table 6.2 of this consultation document, and Sections 4 and 11 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning provide supporting evidence.

Question 110):

What level of FEES should be used for Part L 2021?

a) Option 1, full fabric specification

b) Option 2, fabric specification x1.15

c) Neither, it should be higher

d) Neither, it should be lower

Please explain your reasoning and provide supporting evidence, including whether you think a higher level of FEES will make it more or less likely for a home to be built with low carbon heat.

If the building is thermally improved there is a chance that it will significantly reduce the heat demand. However, special care needs to allow mechanisms to dissipate heat in the summer season and reduce the risk of overheating.

Question 111):

Do you agree that we have adequately covered matters which are currently in the Domestic Building Services Compliance Guide in draft *Approved Document L, volume 1: dwellings* for existing homes?

a) Yes

b) No

If you answered no, please explain which matters are not adequately covered.

1. Real Energy Use
2. Embodied Carbon

Question 112):

Do you agree with the proposed minimum standards for building services in existing homes, as detailed in Sections 5 and 6 of draft *Approved Document L, volume 1: dwellings*?

a) Yes



- b) No, the standards go too far
- c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning.

Question 113): Do you agree with the proposals for replacement fixed building services in existing homes, as detailed in Section 5 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 114): Do you agree with our proposed approach to mandating self-regulating controls in existing domestic buildings, including technical and economic feasibility, as detailed in Sections 5 and 6 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 115): Do you agree with the proposed specifications for building automation and control systems installed in a new or existing home, as detailed in Section 6 of *draft Approved Document L, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 116): Do you agree with the proposals for extending commissioning requirements to Building Automation and Control Systems and on-site electricity generation systems, as detailed in Sections 8 and 9 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 117): Do you agree with the proposals for requirements relating to the assessment of overall energy performance of building services installations and providing information to homeowners, as detailed in Sections 8 and 9 of draft *Approved Document L, volume 1: dwellings*?



a) Yes

b) No, I do not agree with providing this guidance

c) No, the guidance should be improved

If you answered no (b or c), please explain your reasoning.

Question 118): Do you agree with the proposed changes to water treatment guidance and removing formal guidance on water softening?

a) Yes

b) No

If you answered no, please explain your reasoning.

Question 119): Do you agree with the guidance proposals for adequate sizing and controls of building services systems in domestic buildings, as detailed in Sections 5 and 6 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No, I do not agree with providing this guidance

c) No, the guidance should be improved

If you answered no (b or c), please explain your reasoning.

Question 120): Do you agree with the guidance proposals on sizing a system to run at 55°C when a whole heating system is replaced, as detailed in Section 5 of draft *Approved Document L, volume 1: dwellings*?

a) Yes

b) No, I do not agree with providing this guidance

c) No, the guidance should be improved

If you answered no (b or c), please explain your reasoning.

Guidance should allow for systems with lower temperatures.

Question 121): Do you agree with the proposed changes to the supplementary guidance and the external references in Appendix D and Appendix E, in the draft *Approved Document L, volume 1: dwellings* as outlined in paragraph 6.8.2.?

a) Yes

b) Yes, but not with the changes to the supplementary guidance

c) Yes, but not with the external references



d) No

If you answered b, c or d, please explain your reasoning.

Question 122):

Do you agree with the proposal for guidance on the calibration of devices that carry out airtightness testing in new and existing domestic buildings?

☒ a) Yes

☐ b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 123):

Do you agree that we have adequately covered matters for existing dwellings which are currently in the Domestic Ventilation Compliance Guide in draft *Approved Document F, volume 1: dwellings*?

☒ a) Yes

☐ b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 124):

Do you agree with the proposed changes to supplementary guidance and the external references used in Appendix E and Appendix F, for existing domestic buildings from the draft *Approved Document F, volume 1: dwellings*?

☒ a) Yes

☐ b) Yes, but not with the changes to the supplementary guidance

☐ c) Yes, but not with the external references

☐ d) No

If you answered b, c or d, please explain your reasoning.

Question 125):

Do you agree with the proposal to align the guidance and standards for work to existing homes to that outlined in Chapter 4 of the Government Response to the Future Homes Standard consultation?

☒ a) Yes

☐ b) No

If you answered no, please explain your reasoning and provide supporting evidence.



Question 126): Do you agree with the proposed guidance for installing energy efficiency measures in existing homes, as detailed in Section 3 of draft *Approved Document F, volume 1: dwellings*.

a) Yes

b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 127): Do you agree with the content of the proposed checklist for ventilation provision detailed in Appendix D of draft *Approved Document F, volume 1: dwellings*?

a) Yes

b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 128): Do you agree with the guidance in Section 3 of draft *Approved Document F, volume 1: dwellings* when replacing an existing window with no background ventilators?

a) Yes

b) No, the standards go too far

c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning.

Question 129): Do you agree with the proposals in paragraphs 3.29 to 3.31 of draft *Approved Document F, volume 1: dwellings* in 7.4.11 of this consultation document on work to existing kitchens or bathrooms?

a) Yes

b) No, the standards go too far

c) No, the standards do not go far enough

If you answered no (b or c), please explain your reasoning and provide alternative suggestions.

Question 130): Do you agree with the proposal to provide a completed commissioning sheet to the homeowner, as detailed in Section 4 of draft *Approved Document F volume 1: dwellings*?

a) Yes



b) No

If you answered no, please explain your reasoning and provide alternative suggestions.

Question 131): Please provide any feedback you have on the impact assessment here, including the assumptions made and the assessment of the potential costs and benefits of the proposed options we have made.

Question 132): Please provide any feedback you have on the potential impact of the proposals outlined in this consultation document on persons who have a protected characteristic. Please provide evidence to support your comments.

Final observation

Whilst not a specific question in the consultation, the matter of proper enforcement of building regulation compliance needs to be addressed. The Dame Judith Hackett review of building safety and regulations highlighted the low levels of site competency (especially in the residential sector) and poor levels of site inspections to check compliance. Various studies, including from the Zero Carbon Hub, highlighted the large performance gap between expected and actual performance outcomes. The government needs to be sure that enforcement of compliance with regulations is adequately resourced and penalties for compliance are sufficiently high. Many contractors have found that it is cheaper to pay a penalty for non-compliance than get it right the first time. The effectiveness of regulation improvements will depend, therefore, on an effective regulation enforcement system with adequate competency and resources.

The response was led by:

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Gary Clark, Principal, Science and Technology Regional Leader, HOK London Studio

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