Consultation Response

The Future Homes and Buildings Standards: 2023 consultation

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The Home Builders Federation (HBF) is the principal trade association for the home building industry in England and Wales. HBF's membership of more than 400 companies builds most of the market sale homes completed in England and Wales, encompassing private developers and Registered Providers. The majority of HBF's members are small or medium-sized companies (SMEs).

As the main trade association for the home building industry, our members constitute one of the largest bodies of companies that will be affected by the outcome of this consultation.

The document below is the summary of the representative responses from our membership and takes account of the responses of large major housebuilders, SME builders as well as specialist housing providers and other companies associated with the consultation. Whilst HBF's members largely support the proposals within this consultation, they also require that a pragmatic, fair and balanced approach should be taken.

In our response to the Future Homes Standard consultation, HBF recognises the significant contribution new housing makes to reducing the country's carbon emissions and helping towards delivering the governments legally binding target of reaching net zero by 2050. Residential dwellings account for approximately 23% of greenhouse gas emissions in the UK and the benefits that new housing brings to the country helps to radically reduce and decarbonise from additional growth of this figure. It is important to recognise that the home building industry has made significant steps in recent years to accelerate its contribution towards reducing carbon whilst at the same time ensuring delivery of high quality and affordable housing that protects occupants from high energy bills. For instance, Government data shows that new homes built to 2013 regulations already produce less than a third of the carbon than a typical second-hand property In addition, the use of innovative technologies in new housing aids the acceleration of developing products and materials that will be used in retrofitting schemes in years to come.

Question 1. Are you responding as / on behalf of (select all that apply):

Member of the public
Builder/Developer
Building Control Approved Inspector/Registered Building Control Approver
Competent Persons Scheme Operator
Designer/Engineer/Surveyor
Architect
Energy sector
Installer/Specialist sub-contractor
Local authority

Housing Association
Manufacturer/Supply chain
National representative or trade body
Professional body or institution
Property Management
Research/Academic organisation
Other
We respond to this consultation as a trade body association acting on behalf of our home building membership.

Question 2. If you are responding as a member of the public/a building professional, what region are you responding from? [drop down list of England regions + other]

The Home Builders Federation act on behalf of the majority of UK housebuilders representing large medium and small developers of home building. We have national representation across all parts of England and Wales.

Question 3. If you are responding as a member of the public, are you a [checklist: private tenant, housing association/local authority housing tenant, private landlord, homeowner]

N/A.

Question 4. If you are responding on behalf of a business/organisation, what is the name of your business/organisation? [free text]

The Home Builders Federation (HBF).

Question 5. If you are responding on behalf of a business/organisation, where is your business/organisation based/registered? [drop down list England regions + other]

The Home Builders Federation is registered and based in London.

Question 6. When you respond it would be useful if you can confirm whether you are replying as an individual or submitting an official response on behalf of an organisation and include:

your name,	Rhodri Williams
your position (if applicable),	Technical & Sustainability Director
the name of organisation (if applicable),	Home Builders Federation
an address (including post-code),	HBF House, 27 Broadwall, London, SE1 9PL
an email address, and	Rhodri.williams@hbf.co.uk
a contact telephone number	07742 401 594

Question 7. Which option for the dwelling notional buildings (for dwellings not connected to heat networks) set out in The Future Homes Standard 2025: dwelling notional buildings for consultation do you prefer?

a. Option 1 (higher carbon and bill savings, higher capital cost)
b. Option 2 (lower carbon savings, increase in bill costs, lower capital cost)

HBF and its members are keen to support government in its ambition towards achieving net zero by 2050. The home building industry recognises that our sector, which has made significant strides over the past two decades has a further significant role to play. It is recognised that the performance requirements of both options set out

in the consultation document closely resemble the fabric standards in the 2021 Part L uplift to building regulations. Industry has worked hard over the past two years to achieve the fabric performance uplift of Part L 2021 and it is welcomed that the approach taken in this consultation represents a further evolution of those principles. Following liaison with our members, including building scientists, developers and engineers, Acknowledging that Option 1 is the preferred choice for Government of the notional buildings specification, industry is keen to support a Future Homes Standard that enhances the cost savings for homebuyers who choose to purchase new homes. However, with the lack of information available and following extensive discussion with members about the physical realities involved with even theoretically delivering Option 1 – as well as the realities for homeowners and residents - HBF finds it impossible to opt for Option 1 while Option 2, with higher energy costs for consumers, represents a retrograde shift in the evolution of new build homes and would be out of step with the priorities of homebuyers.

HBF's concerns with regard to Option 1 can be summarised as follows:

- It would appear to be at odds with some of the principles inherent in the Housing Secretary's statements about the way he wishes for new homes to be designed and would significantly restrict the ability of house builders to innovate in relation to design;
- Certain types of housing would also be extremely difficult to deliver within such regulations, particularly types of housing that have traditionally been popular with homebuyers, including mid-terraced properties and three storey family homes;
- Estimates of running costs are unrealistic;
- No account is taken of additional maintenance costs that would be borne by homeowners in the long run in relation to photovoltaic panels

Many of the concerns regarding Option 1 relate to the requirement of 40% provision of Photovoltaic (PV) to the floor area requirement for all dwellings. The figure provided within the consultation is very high as a percentage of equivalent floor area. We are concerned that stipulating a value against a required floor area is too prescriptive and will limit innovation in the development of other ways of making new homes more energy efficient. Industry welcomes the use of PV as part of the Future Homes Standard, but the prescription of a specific and arbitrary proportion of roof coverage would be practically challenging and likely to result in significant unintended consequences. One significant outcome of such an approach would be a negative impact on house design. The specificity of this requirement will see a reduction in small and mid terraced properties that are unable to occupy afford the roof space needed to meet the requirements. These are often the types of homes suitable and affordable for first-time buyers. the delivery of two-and-a-half and three storey properties occupying a room in the roof will also be negatively impacted by the minimum requirement of PV. Any property type that occupies a dormer window or glazed roof light will not be able to successfully achieve the required standard within Option 1. The street scene design including place making, local vernacular, good design and beauty may all be affected by over the necessary provision of PV. Roof design including chimneys, tiling details, finials in addition to varying roofscapes, hips and gable roofs will all be impacted upon and will likely become obsolete as roof styles and orientations will become more standardised to accommodate the required volume of PV. This evidently runs counter to the Housing Secretary's vision for beauty and bespoke elements of design.

The consultation proposes changes to air tightness, linked through to ventilation type and ventilation performance which is consulted upon under approved document Part F-Ventilation. Adequate ventilation and an understanding on lifestyle patterns and choices is critical in delivering a healthy home environment. Careful consideration needs to be given towards building design when balancing this with the thermal performance of the building. In addition, improved air tightness and fabric thermal performance is a critical requirement when

looking to move away from traditional gas boilers towards heat pump technology which generally run at lower flow rate temperatures than their traditional systems.

Proposing decentralised continuous mechanical ventilation will require continuous energy demand. Home owners would need to see evidence that there is a benefit in cost for the provision of continuously running extract ventilation. The consultation suggests a maximum ventilation duct length of two metres. This will have a detrimental impact on house type designs and is likely to see the removal of certain designs from product ranges. For example, a typical mid terraced property is highly unlikely to achieve a two meter duct run from a toilet or bathroom normally located towards the middle of a property. These types of houses are, again, most often purchased by first-time buyers. There is caution that these types of homes would disappear altogether from house type ranges narrowing the choice and designs that can be offered to prospective homeowners. It is relevant to add that it is understood that extract ventilation is tested at lengths of up to five metres in length. It therefore seems nonsensical therefore that any new home built to the FHS is restricted at two metres.

HBF and its membership wish to support the most cost-effective option for its customers and new homeowners. A variation to Option 1 could, in theory, help deliver this with lower energy bills for households, but a greater appreciation of the practical realities and consequences is needed before such standards could reasonably be implemented. Without an evolution to the proposal, new homes will offer less choice to homebuyers – particularly those starting out on the housing ladder – and the volume of housing delivery may also be further impacted.
Option 1, with the air tightness requirements imposed, comes with considerably higher costs associated with materials and construction The provision of photovoltaic panels together with associated costs in procurement, delivery, cabling, connection charges and certified commissioning of the technology increases the costs to developers and complexity for home owners. It is important to recognise that this emerging technology currently has a lifespan of between 20 to 25 years but could look to improve on this in the future. Whilst they may provide a sound opportunity for energy generation and long-term reductions in energy bills, it must be recognised that they will also impose additional costs to homeowners. This fact is absent from the consultation and its cost-benefit equation. It is essential that government acknowledges this ongoing future cost and responsibility that will lie with the homeowner when considering its notional building specification under Option 1. Servicing, cleaning, maintenance, access and replacement costs will fall to homeowners. As these technologies will also be located at the most inaccessible parts of the houses scaffolding or other high level access platforms will need to be used for any repair work or replacement, imposing further costs to home owners.

Other additional costs include the associated planning consents, licences and any associated fees that may be required in certain locations such as locations without pavements, heritage or conservation areas or properties that are located immediately adjacent to public footpaths or highways. This will be a new and direct cost to the homeowner as the type of technology has not generally appeared in UK housing construction up until now. It is important to recognise therefore that the benefits provided in terms of energy generation via the renewable technology also brings additional responsibility – and cost.

It is relevant to note that government themselves under item *8.13 Housing Supply* of the consultation, recognise the possibility whereby some of the additional construction costs associated with Option 1 could be 'passed onto customers to shoulder' where possible and where able to do so. This statement suggests that house builder and developers can simply pass on associated costs onto homeowners. However, it is generally accepted that house builders are 'price takers' in local housing markets with property values determined by valuers on behalf of mortgage lenders and based significantly on the local secondary housing market values for comparable properties. Recent consumer research by the Competition and Markets Authority (CMA) found that whether a property is newly built or second hand is a secondary consideration for homebuyers. The CMA also note the very high levels of correlation in price paid data between second hand and new build properties, providing further

evidence that without significant change in practices of mortgage lenders and valuers, the ability for house builders to pass on some additional costs to buyers is not practicable or meaningful.[1]

There has been a clearer understanding from industry with the performance and requirements of constructing the FHS to the building elements as laid out within Option 2. This can be explained by the greater familiarity with the fabric performance representing a gradual evolution following the recent changes introduced under part L 2021. There is therefore perhaps a higher degree of optimism with Option 2 but a willingness towards 'some pV' under Option 1.

Finally, the consultation requires the consideration of the specification types to be measured against the forthcoming Home Energy Model (HEM). The HEM is currently in a very early stage of construction and design. In the absence of a reliable, finalised and workable version of HEM, industry is struggling to achieve accurate calculations and measures of building and fabric performance. It is critical that a fully tested and proven HEM is in place in order to be able to accurately respond in a meaningful way to the FHS consultation. Because the HEM is still more than a year away from being able to offer builders a reliable and consistent output in terms of the expected performance of different house designs against the likely Future Homes Standard requirements, house builders would be asked to make extensive commitments in terms of investment, taking even greater risk with little confidence about the eventual HEM outcomes for different housing designs. For HBF's many small and medium-sized house builders, particularly, this will represent yet another blow to their ongoing activity in the market. Meanwhile for builders of all sizes it is likely that a more cautious approach to investment decisions will be necessitated with costs and practical implications of FHS delivery effectively unknown until very close to the date of implementation.
For these reasons it is, with regret and frustration, impossible for HBF to opt for either of the two dwelling notional buildings.

Question 8. What are your priorities for the new specification? (select all that apply)

✓ ☐ **low capital cost**
✓ ☐ **lower bills**
✓ ☐ **carbon savings**
✓ ☐ **other (please provide further information)**

Please provide any additional comments to support your view on the notional building for dwellings not connected to heat networks.

There are many factors that builders, developers, and home builders take into consideration whilst undertaking the construction of new homes. In many ways the look and feel of new homes has changed significantly in recent years, extending not just to the homes themselves but also the surrounding environment. As well as building regulations changes (Parts F, L, O and S particularly), new sites will nowadays require Sustainable Drainage Systems and, from earlier this year, be required to demonstrate biodiversity net gain (BNG). The pace of change in the provision of enhanced energy efficiency performance in new build homes has been considerable in recent years. In support of the 2021 Part L changes and to prepare for the FHS, house builders have invested in exploring and developing new technologies and have come together to support the work of the Future Homes Hub.

[1] CMA Housebuilding Market Study (pp.83-84)

One of the key differences and possibly one of the most important distinctions between new housing and older housing stock is the thermal performance and environmental benefits that new housing brings. The cost of living crisis, compounded by high with inflation has placed enormous burdens on households. Because of the high cost of energy we have observed an ever-increasing interest in the energy efficiency of new homes, HBF has, for many years, promoted to Government and to mortgage lenders the consumer benefits that would flow from a closer link between actual running costs of homes and either mortgage advances or mortgage affordability calculations.

Providing new homeowners with energy efficient housing guaranteeing low energy bills and delivering carbon reduction is a high priority for house builders and has the potential to be a more prominent criterion for homebuyers when looking for a new home.

The home building industry embraces its role as an innovator in this space, exploring and investing in new technologies that will ultimately feature as important parts of the retrofit market in years to come.

While the items identified above are important key factors in this, there are other building and lifestyle matters that are also of great importance. These can be identified as follows:

When new regulations come into effect consideration and forward planning is required for home builders to be able to adapt and make the necessary adjustments to the new requirements. This is evidently a reasonable request that would be made by any industry or sector. But for house building, the challenge is even greater than in other sectors. Lead times and uncertainty around planning timescales necessitates lengthy investment horizons. Indeed, it is this overarching challenge and the risk inherent in this equation that has been the foremost reason for the decline in the number of SMEs active in the house building industry, as identified by the CMA in its recent Housebuilding Market Study.

New technologies including novel or additional construction methods and the time that they add to planning, design and development timescales all requires extensive forethought if builders are to be able to continue to deliver the quality of build and finish that customers expect in realistic and achievable timeframes. Consideration is also required by home builders towards customer education and expectation for the successful integration and useability of new homes utilising new technology. Examples of this can be associated with lifestyle patterns and behaviours around electrical vehicle charging, ventilation, heating, cooling, energy generation which includes peak demand and air tightness in new build properties that were never necessarily a consideration of such importance in the past.

It should also be recognised that extensive change to building regulations, particularly when new products are involved, needs new and additional skills. In some instances, the type of expertise that will be relied upon under the FHS regime is almost entirely new and therefore starting from a very small base. Correct certification along with education and experience is a time considered expense and is a high priority for home builders when considering such significant changes to regulation. Examples of this can be shown around the availability and training needed for the correct installation and commissioning of heat pumps and photovoltaic panels and associated equipment.

Lastly, it is an essential consideration for home builders that an adequate supply chain is ready to support the delivery of FHS properties, potentially at a rate of 300,000 net additional homes per year (requiring considerably more than 300,000 new homes after netting off demolitions). Market availability of products, services and equipment required in order to achieve the increased standards are a main priority and a concern for home builders. Government intervention is needed for industry to adequately scale up production for new pieces of technology required within the fabric of new homes that are linked to the governments raised standards. This

issue was highlighted to government in HBF's last Part L consultation response. The heat pump environment within the UK has showed little tangible signs of being scaled up over recent years but will theoretically need to be equipped in short order to deliver hundreds of thousands of newly installed units, even before we take into account any retrofit market to service existing homes. The UK supply chain is still lacking in maturity and efficiency.

The fabric and building uplift costs associated with Option 1 and 2 of the consultation in table 4.2 are contested by our membership and are not considered an accurate reflection on the real lief costs experienced by builders with the true cost being far higher.

The UK needs to establish itself with less reliance on overseas importation of manufactured technology whilst at the same time producing competitively priced UK manufactured technology and materials. This process still appears to be in its infancy. It is essential if the enhanced standards proposed in this consultation are to be successfully delivered.

Lastly, this is made even more relevant today with the new emergence of embodied carbon due to play an important role in the coming years. While not forming part of this consultation, Embodied Carbon and Whole Life Carbon is a material consideration and an emerging issue for the home building industry which can only be successfully achieved with more home-grown industries and less reliance on overseas imports which inevitably come with a larger carbon footprint.

Question 9. Which option for the dwelling notional buildings for dwellings connected to heat networks set out in The Future Homes Standard 2025: dwelling notional buildings for consultation do you prefer?

a. Option 1 (higher carbon and bill savings, higher capital cost)
b. Option 2 (lower carbon savings, increase in bill costs, lower capital cost)

Please provide any additional comments on the specification of the heat network in the notional building.

Heat networks can be highly efficient ways of delivering heat due to large scale heat pumps and thermal stores allowing heat to be produced at times of low cost and low tariff off peak rates. The benefits of this extend to help reduce peak demand on the local electrical grid. Fourth generation heat networks produce heat from a centralised energy centre having lower operating temperatures. These heat networks have already been tested and are operational in certain parts of the country. HBF and its membership believe it is therefore equally important as part of this consultation that government acknowledges that where connection onto a fourth generation heat network is available, that the relevant local authority also recognises their purpose and facilitate highways and public adoption agreements to continue in the usual way. It is inevitable that in these cases insulated pipes will be located in roads and footpaths serving the housing developments and recognition of this is required so that highways adoptions don't become prohibitive for home builders in their obligations to meeting Part L of the building regulations.

Many towns and cities across the UK are considering strategies towards linking existing and new urban environments onto localised residential communal heat networks. These urban heat networks are often linked to an industrial source which benefits from surplus excess heat which normally escapes to atmosphere which would now be made available for benefiting residential means. A heat network of this nature where a gas or carbon feed is the source of heat creation is known as a third generation heat network. It is important to add that where excess heat delivered to new homes comes from an industrial source where a fossil fuel or other type carbon is the generating fuel type, it should not then cause detriment to the SAP or HEM calculation value of the property. This type of urban heat network connection is in effect 'free heat' or 'second hand' heat that

would otherwise have escaped to atmosphere. It's important to recognise this as a secondary use or 100% recycling delivering a total benefit to households and communities and should therefore be credited and scored accordingly. Assurances need to be made by Government and Ofgem that if the primary source of heating is delivered via private industrial producers for Heat Networks, that those respective industries can continue to provide heat into the future without the shutting down or closure of production. This would damage the reliability of heat networks and prove to be a fundamental consideration in their introduction with Government.

The consultation requires the consideration of the specification types to be measured against the new incoming Home Energy Model (HEM). The HEM is currently in a very early stage of construction and design. This means that in the absence of a finalised and workable version of HEM, industry is struggling to achieve accurate calculations and measures of building and fabric performance. It is considered critical that in order to be able to accurately respond in a meaningful way to either Option 1 or 2 of the FHS consultation, a fully tested and proven HEM is required from the outset to compliment the FHS consultation. This has generally led to a position where neither of the proposed Options can accurately be commented upon.

Question 10. Which option do you prefer for the proposed non-domestic notional buildings set out in the NCM modelling guide?

a. Option 1
b. Option 2

As the representative body of the house building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings.

Question 11. What are your priorities for the new specification?

☐ low capital cost
☐ lower bills
☐ carbon savings
☐ other (please provide further information)

Please provide additional information to support your view on the proposed non-domestic notional buildings set out in the National Calculation Methodology modelling guide.

As the representative body of the house building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non domestic buildings.

Question 12. Do you agree that the metrics suggested above (TER, TPER and FEE) be used to set performance requirements for the Future Homes and Buildings Standards?

a. Yes
b. Yes, and I want to provide views on the suitability of these metrics and/or their alternatives
c. No, I think delivered energy should be used
d. No, I think FEE should be changed
e. No, for another reason (please provide justification)

HBF agree with item (b) in the list above. It is understood that the metrics proposed as part of this consultation are set by building regulations 26, 26A and 26C. Each metric is used to set the whole building performance and allows for the assessment and control of different aspects of building performance. The three metrics hereby proposed and which must be met include Dwelling Emission Rate (DER), Dwelling Primary Energy Rate (DPER) and dwelling Fabric Energy Efficiency rate (FEE).

The DER drives the absolute reduction of carbon emissions. This captures greenhouse gas values including upstream emissions from power stations delivering electrical energy to new homes. This is relevant in the first instance and with the first generation of new build dwellings associated with this consultation where electrical provision from the national grid will be fossil fuel based. However, as we move towards 2050 and net zero, this metric will become less relevant as the zero carbon ready homes built under this Part L consultation will slowly begin to transition away from fossil fuel connection to 100% renewable means.

DPER is defined as energy that has not undergone any conversion or transformation process. Primary Energy takes into account the efficiency of providing energy to the new build dwelling. These efficiencies are the improved building standards being proposed under this consultation whereby new build dwellings will benefit from improved and lower heating requirements, lower electrical generation needs and reduced energy requirements needed to deliver to the building. It is expected that the DPER value will reduce towards new build properties as the UK moved towards 2050 and a net zero national grid.

The FEE standard is a measure of the quality and efficiency of the fabric of the building. The most tangible and most environmental aspect of a new build dwelling is the high fabric performance. This fabric first approach has been a priority for builders and developers for well over 10 years. It allows a new build dwelling to act highly thermally efficient in perpetuity and is the most celebrated aspect of a new property. It also helps deliver the most tangible benefit for new homeowners to experience driving down heating and energy costs. It is an important metric to retain and provides homeowners with arguably the most relevant information to base an understanding on the key benefits of new home ownership over older housing stock.

Finally, it is imperative that any new software used by government for its roll out of the Home Energy Model (HEM) captures correctly and accurately the metrics discussed within this area, and that any difficulties, inaccuracies and software issues are identified and addressed as a matter of urgency such that there is no ongoing delay to the software's ability to be used. The last iteration of SAP 10.2 caused industry much hardship and lost time in investment and resource ultimately delaying its ability to respond to regulation. It is vital that government address the issue at the present time and allow sufficient testing for the software's early roll out ahead of regulation coming into effect. It would be preferred is the software utilising the metrics listed above were to become fully available to industry in line with the legislation being laid in 2024 and not later in 2025 when the regulation comes into being. This will allow industry to test, update and respond to construction and design related matter such that drawings, specifications and any required adjustments needed ahead of the building regulation coming into being.

Question 13. Do you agree with the proposed changes to minimum building services efficiencies and controls set out in Section 6 of draft Approved Document L, Volume 1: Dwellings?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

HBF and its membership generally agrees with the proposals to amend minimum building services, efficiencies and controls as set out in Section 6 of draft Approved Document L Volume 1; Dwellings and table 6.1 of the consultation document.

Improvements to the efficiencies of continuous mechanical extract ventilation system from 0.7W/(L.s) to 0.2W/(L.s) is considered reasonable with improvements and availability in market products. A small increase in performance from 1.5W/(L.s) to 1.4W/(L.s) for continuous mechanical supply and extract ventilation is also considered reasonable with improvement to market products in the coming years.

An area that sees significant improvement in market products and one that has tangible, noticeable and immediate benefits for customers in new homes is lighting provision. With low energy LED lamps, more light output can be achieved with much less power consumption. For example, a 6.5W LED lamp will give a similar light output to a 50W Halogen bulb. Thus 87% less energy for the same light output. When using LED technology more energy is converted to light rather than heat. The new homes industry has been providing low energy lighting for over 20 years and as technology improves, more lumens are able to be produced with even lower wattage - i.e. more lumens per Watt. HBF therefore agree with government proposals in table 6.1 that improving lighting efficiencies from 75lm/W to 105lm/W for both indoor and outdoor lighting is agreeable. As more of the market transitions across to LED lighting it is clear that future iterations of Part L will most likely see reference to 'watts' as lighting brightness become less relevant.

It is likely that underfloor heating will increase in popularity in new homes with the transition towards heat pumps and low temperature flow rates. Underfloor heating is an efficient way to distribute heating around a room and around a home more generally. In addition to the surface area benefit of radiators and convectors not taking up wall space, underfloor heating is becoming more a more financially viable option for homeowners if captured and installed at the right stage of build thus is it entirely relevant to be identified under table 6.1 of the consultation proposal. In order to achieve the most thermal gain and therefore efficiency in a new build dwelling it is important that any underfloor heating systems work as efficiently as possible. The thermal resistance of the floor itself therefore plays a critical role in the thermal conductivity of heat from source to air. It is supported by HBF that a value of 0.15(m2.k)/W or less is therefore achieved in this regard. This will help ensure that the full benefit of underfloor heating is achieved in the habitable rooms that they serve. However it is relevant to identify that stipulating a low thermal value of 0.15 m2kW or less will likely prove difficult to achieve with carpet. Therefore the consultation runs the risk of being too prescriptive on lifestyle choices for home users who may not be able to specify a carpet in an under floor heated room. This would not be supported by our membership who support the use, fitting and retaining the customer choice to fit and install carpet in new homes.

Finally, is it recognised that hydrogen ready gas boilers will not be permitted for use in new build properties under this Part L consultation. Whilst this is understood, it is relevant to observe that, should new technologies change or become environmentally available in the future then there will be no infrastructure in place to support the installation or inclusion of this type of energy source. A strategic approach would normally have included mains services in roads, footpaths and estate construction including within private curtilage. However, in this proposed scenario where total exclusion is taken then it should be recognised that it would be highly unlikely to ever become viable to provide this type of mains service to individual households in the future potentially locking out households from an alternative fuel source.

Question 14. Do you agree with the proposal to include additional guidance around heat pump controls for homes, as set out in Section 6 of draft Approved Document L, Volume 1: Dwellings?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view

c. No (please provide justification)

HBF agrees with the proposal to include additional guidance around heat pump controls for homes as set out in Section 6 of draft document L.

It is important to continue with the provision of user-friendly simplified control systems for the heating of new build properties. Whilst there may be sophisticated and intelligent programmes or mechanisms behind the user interface, it is important to recognise that in order to maximise carbon and energy reduction, the user interface in the home is required to be easy and simple to follow. It is suggested that government ensures that this is provided with product manufacturers manufacturing and delivering the customer user interface.

Furthermore, it is also observed that there is an increasing reliance on many controllers and customer interface devices relying on internet or 'App' based programming. It is important to recognise that technologies can easily fail or lose internet connection potentially causing harm, frustration and inefficiencies for home users. It is critical therefore that basic 'offline' or analogue programming, on appliances including seven day digital programming, is provided without the need for internet or web or mobile-based platforms. There has been much feedback from our membership including Registered Providers along these lines with consideration needed towards the ability of elderly, disabled and the more vulnerable residents that basic offline user interfaces are also provided in addition to the more sophisticated web-based apps that calculate living patterns and algorithms associated with home user behaviour. Heat source appliances should therefore be useable for the purposes for which they are intended without reliance on telephony or internet connection. It is relevant to add at this point that in order for a house completion certificate to be awarded by the building control approval body, no heating system can be installed which relies on third party fibre or web-based contract in order to already be operational. It is therefore essential that heat pump controls can be operated independently of these features and not solely reliant.

With the provision of heat pumps, it is essential that accurate and reliable temperature control mechanisms are in place that monitor indoor and outdoor temperature. Weather compensators together with internal dual zone heating has become standard in new build properties, and it is important that these kinds of features continue with the future update of Part L. With lower operating temperatures being a feature of heat pump technology, it is even more important that these technologies are reliable and therefore provide new home users with the confidence that their heating systems can operate efficiently and effectively.

Question 15. Do you agree that operating and maintenance information should be fixed to heat pump units in new homes?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

HBF does not agree with the requirement that operating and maintenance information should be fixed to the heat pump unit or the hot water storage vessel.

Heat pumps are most likely to be located on the outside of the building, some in less accessible areas such as roof or loft locations. HBF does not believe it will be helpful for operating and maintenance manuals to be located at these weather exposed positions. It is preferred that the most sensible and logical approach would be for documents to be correctly handed to the homeowner in the traditional way at home completion stage. It is suggested that the documents are compiled together with all other commissioning and certification documents along with a home user guide and handed to the new homeowners in the normal way. These are

physically handed to the homeowners or alternatively located in the kitchen area of a new build property. It is not realistic to fix such instructions to an external appliance given the obvious weather conditions in the UK. It is also not realistic to host web-based links to manuals or websites that will inevitably loose the web based link in future years. It is already the case that manufactures hold online libraries of product information. This is most likely to be the preferred back up arrangement for owners of new appliances rather than to rely on externally fixed instruction manuals.

Appropriate and timely provision of information for homeowners is dealt with effectively by the New Homes Quality Code and HBF would encourage government to engage NHQC on future provision of the information described in Question 15.

Question 16. Do you think that the operating and maintenance information set out in Section 10 of draft Approved Document L, Volume 1: Dwellings is sufficient to ensure that heat pumps are operated and maintained correctly?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

HBF agrees with the operating and maintenance information as set out in Section 10 of draft document L. It is observed that as heat pump technology evolves and improves there will be minor updates, variations and natural progression of how these function.

Question 17. Do you agree with the proposed changes to Section 4 of draft Approved Document L, Volume 1: Dwellings, designed to limit heat loss from low carbon heating systems?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

We also propose updating guidance on the sizing of domestic hot water storage vessels. This is set out in Section 5 of draft Approved Document L, Volume 1: Dwellings.

While some of the proposals made in section 4 of the draft Approved Document L are agreeable, some are not. It is observed that it is again required that all pipework in heating circuits be fully insulated inside the thermal envelope. HBF agrees with insulating pipework outside the thermal envelope such as in a cold roof space or from the externally located heat into a new build dwelling. This would be logical given the need to capture and protect all generated heat. However, to insulate pipework from heating and hot water systems within the home once inside the inner thermal envelope appears to be of minor to zero heating or environmental relevance. Despite this, the proposed approach will dramatically increase the build and labour cost as well as adding time to the construction process. Furthermore any future leakage or problems associated with pipework or plumbing would be harder to identify and locate due to the insulated sheathing around all pipework in an already restricted working and access area i.e within a floor joist zone. Future homeowners, when they come to identify and resolve issues with pipework in the decades ahead will therefore face more difficulty and incur greater costs.

As discussed in answer to question 13 of the consultation, it is recognised that underfloor heating will become an increasing feature of new build properties. Underfloor heating is in effect located within the thermal envelope on the ground floor. A whole floor heating approach is recognised as providing a sound heating approach to the floor to which it serves by equal distribution of heat over a given surface area. The same principle is achieved

with pipework running through first and second floor joist zones in new build properties. Here, heating is not lost as it is retained within the inner thermal envelope of the building adding and contributing towards the whole house heating approach and in effect provides an element of underfloor heating to the rooms above. This principal is precisely the same and should not therefore be dismissed or legislated against within the updated regulation as it entirely benefits the property and should not be considered as lost heat.

HBF does not therefore support the requirement to fully insulate heating and hot water pipes once located within the inner thermal envelope of a new build property. It has minimal to zero benefit to the customer or builder but drives up cost, time, complexity and the ability for future access, inspection and maintenance to be successfully carried out as well as difficulty when working within restricted areas. There has been much feedback and frustration regarding this specific issue from industry since it was first introduced under Part L 2021. With new build properties being so thermally efficient in fabric performance, it is considered that there is no benefit to internally insulated pipework within the thermal envelope and it is hereby proposed that this requirement should be removed from the Part L FHS legislation.

Question 18. Do you agree with the proposed sizing methodology for hot water storage vessels for new homes?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

No, HBF does not agree with the proposed sizing methodology for hot water storage vessels in new homes. Water reduction generally is emerging as an increasing issue of importance for government across other departments namely, Defra and its Plan for Water. It is anticipated that industry will be reviewing Part G and its associated water calculations later in 2024.

With water availability, water use and water reduction becoming more important HBF does not agree with increasing the size of water storage vessels in new build properties. Increasing this provision takes up additional space within the property and also increases the carbon and/or energy demand. It also increases the carbon/energy footprint by requiring additional heating to be delivered. Furthermore, the required insulation as set out in the consultation is not currently available on the UK market.The type and specification of the insulation is an important factor as simply increasing insulation does not necessarily provide an improvement to insulative properties.

HBF does support the notion of considering ‘thermal storage’ as a cheaper and more environmentally friendly way of retaining and storing excess energy from surplus electricity gained from the occupation of PV to a property. The automatic switch of electrical use to thermal storage on an inverter can be a cheaper, more practicable and a more efficient way of storing surplus energy than installing a domestic battery which carries a very high environmental cost.

Generally new homes have been utilising over the last 15 to 20 years a combi gas boilers. These boilers are very efficient and in most cases do not require a hot water cylinder to be provided as they deliver instant heat on demand. This is a very efficient form of hot water delivery and removes the need for homeowners to install, occupy and pay for thermal storage which has been considered inefficient and costly. As we transition towards ASHP and new renewable technology in homes there is the need for the re-introduction of hot water cylinders. It is questionable whether this is re-introducing a cost to the consumer that was not there previously. The only benefit for its inclusion is for the point raised above where surplus energy generated from PV can help pre-heat the cylinder. Any use of an immersion switch or other means to raise the temperature will be considered a direct

increase in customer cost. Water cylinders should therefore be kept to a minimum size in capacity to help reduce the energy risk whilst at the same time help contribute towards a reduction in water consumption related to Defra's Plan for Water and Part G of the Building Regulations. Any upsizing of water cylinders moves away from this principle.

Question 19. Do you agree with the proposed changes to minimum building services efficiencies and controls set out in Section 6 of draft Approved Document L, Volume 2: Buildings other than dwellings?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

As the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 20. Do you agree with the proposed guidance on the insulation standard for building heat distribution systems in Approved Document L, Volume 2: Buildings other than dwellings?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

As the representative body of the house building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 21. Do you agree that the current guidance for buildings with low energy demand which are not exempt from the Building Regulations, as described in Approved Document L, Volume 2: Buildings other than dwellings should be retained without amendment?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view<br c. No (please provide justification)

As the representative body of the house building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 22. Do you agree that lifts, escalators and moving walkways in new buildings (but not when installed withing a dwelling) should be included in the definition of fixed building services?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

As the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 23. Do you agree with the proposed guidance for passenger lifts, escalators and moving walkways in draft Approved Document L, Volume 2: Buildings other than dwellings?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

As the representative body of the building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 24. Do you have any further comments on any other changes to the proposed guidance in draft Approved Document L, Volume 2: Buildings other than dwellings?

a. Yes (please provide comments)
b. No

As the representative body of the house building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 25. Should we set whole-building standards for dwellings created through a material change of use?

a. Yes
b. No, an elemental standard should be set with an option to use a notional building if the designer prefers
c. No, for another reason (please provide justification)

HBF believes answer b) is the best approach for building adaptation, conversion and redevelopment. Building conversions made up around 28,000 new homes in England during 2021-22.. This provides a significant contribution to housing supply. There is much scope for promoting more building refurbishment, conversion and re-development around the UK and the environment to achieve this it needs to be attractive to would be investors. There is a higher degree of cost and risk associated with building conversions as well as being a more specialised profession and construction type. Restrictions associated with existing building could be identified as buildings being Grade I or Grade II listed status. Here any conversion work would be heavily restricted. Furthermore, existing buildings may have fixed features that cannot in every circumstance be easily adjusted or removed in order to perform to the same standards as new build properties.

HBF believes that having a reasonable and deliverable degree of enhancement is a pragmatic and favourable position for government to take in its draft Part L consultation for existing buildings if achievable. It is also brought to governments attention that it is often too difficult to get old historic buildings to perform to the same standards as new build properties. It is important to make clear that any building undergoing a conversion is entering a new lifecycle of building use. Here, with the introduction of Whole Life Carbon in the near future, there would be a 100% gain in building materials, foundations, walls and construction being provided at a net zero cost due to their pre-existence. The property would in effect be gaining a new lease of life without the high carbon footprint it would otherwise have endured in constructing it. This is therefore considered a significant benefit to the environment and a significant contributor towards the reduction of a Whole Life Carbon valuation of a property. Any environmental gain in building performance and fabric performance thereafter is a significant

gain and contributor towards carbon and energy reduction. This theory should be recognised within the consultation and recognised in any subsequent update in building regulation.

Question 26. Should the proposed new MCU standard apply to the same types of conversion as are already listed in Approved Document L, Volume 1: Dwellings?

a. Yes
b. No, standards should also apply to non-dwelling accommodation e.g., student or patient accommodation, care homes, and hotels
c. No, the standard should be clearer that it applies to houses of multiple occupation (please recommend specific building types you think the standard should apply to and provide justification)
d. No, for another reason (please provide justification)

Yes. HBF believes the proposed new MCU standards as explained above should also apply to the same types of conversion as already listed in approved document L. Dwellings.

Question 27. Should different categories of MCU buildings be subject to different requirements?

a. Yes
b. No (please provide justification)

Yes. HBF believes it would be beneficial to be able to categorise between the examples given in the consultation document whereby there would be a distinction between low rise versus mid and high rise Material Change of Use (MCU) building types.

Question 28. Which factors should be taken into account when defining building categories? (check all those that apply)

✓ ☐ **height of the building, i.e., low versus mid- to high-rise buildings**
✓ ☐ **floor area of the building**
☐ **the expertise of those carrying out the work**
✓ ☐ **whether the conversion is a part- or whole-building conversion**
✓ ☐ **Other (please state)**

Please provide additional information to support your view.

HBF believes there are many considerations to be taken into account when defining building categories. The height of the building relative to the number of residential dwellings being built for conversion has an impact on the available roof space for photovoltaic panels and equal distribution of renewable technology. Conversely an existing low rise building occupying a large footprint has a greater opportunity for PV and electrical generation relative to the number of properties being built and can achieve a greater benefit for occupants.

In certain circumstances, only part of an existing building is being offered for conversion into residential premises. In this instance there is a greater degree of restriction and offering that can be available for residents to benefit from. Residential residents may not gain access to roof or communal areas and therefore the number of residential premises being considered as part of an existing building can have an impact on available technologies used in building performance and environmental gain.

Additionally, listed buildings or buildings located in heritage or conservation areas are under greater scrutiny to retain character, features and internal and external architectural features. In these instances, there will be greater restrictions imposed onto developers and therefore less ability to adjust or enhance a building's existing features to cater for environmental benefits such as building fabric and renewable energy provision. This needs to be taken into account within the proposed draft document L if they are to be identified as being within scope of the proposed MCU changes.

Question 29. Do you agree with the illustrative energy efficiency requirements and proposed notional building specifications for MCU buildings?

a. Yes
b. No

Yes. HBF agrees with the illustrative energy efficiency requirements as identified in table 7.1 Notional Buildings for Material Change of Use in the consultation document.

Question 30. If you answered no to the previous question, please provide additional information to support your view. Select all that apply. The requirements are:

☐ **too stretching**
☐ **not stretching enough**
☐ **not economically viable**
☐ **not practical/technically feasible**
☐ **other (please provide further details)**

N/A

Question 31. Do you agree with using the metrics of primary energy rate, emission rate and fabric energy efficiency rate, if we move to whole dwelling standards for MCU buildings?

a. Yes
b. Yes, and I want to provide additional suggestions or information to support my view
c. No (please provide justification)

Yes. HBF agrees with the metrics of primary energy rate, emission rate and fabric energy efficiency rate for MCU buildings. It is important to draw comparisons across all building types so that consistency and alignment can be made in new buildings entering the residential market for new homeowners to understand and draw comparisons by.

Question 32. Under what circumstances should building control bodies be allowed to relax an MCU standard?

a. None, building control bodies should not be able to relax MCU standards
b. Building control bodies should be able to relax under the following circumstances (please provide further details).

HBF agrees with the proposed definitions given in the consultation document for the relaxation of notional building standards for an MCU. Building control bodies should be permitted to offer relaxation to any MCU building where the technical or practical feasibility does not allow for achieving the proposed building standards such as the weights or available space to install insulation to a building. Further matters for consideration under

relaxation could be seen where the physical space does not allow outside of a dwelling where encroachment would otherwise take place onto a public footpath or side alleyway. The building may for example, be listed or be located in a conservation area where no change of visual appearance may be permitted to take place. Often in these circumstances the planning department along with heritage officers or organisations such as English Heritage may impose strict rules governing a buildings ability or appearance to adequately comply. As such, recognition and the ability to offer relaxation of the standards are required in these circumstances.

Question 33. Do you have views on how we can ensure any relaxation is applied appropriately and consistently?

Please select all that apply:

✓ ☐ there should be guidance on circumstances where relaxation of the notional standard may be appropriate

✓ ☐ there should be monitoring of how relaxation is applied

☐ only formal relaxation or dispensation through the local authority should be possible

☐ other (please provide further details)

HBF believes that formal guidance should be provided by government to authorities on where relaxation of the national standards may reasonably be applied.

Question 34. Should a limiting standard be retained for MCU dwellings?

a. Yes (please provide further details)

b. No, it is too strict

c. No, it is not strict enough

d. No, there is not enough information

e. No, for another reason (please provide further details)

HBF supports a limiting standard being retained in buildings undergoing a material change of use where a U-value should not be greater than 0.7W(m2k). An inferior U-value for the thermal element may be acceptable where work complies with Part C of the Building Regulations on protection from the harmful effects of interstitial and surface condensation including mould and harmful spores.

Question 35. If a limiting standard is retained, what should the limiting standard safeguard against?

Please select all that apply:

✓ ☐ risk of moisture, damp and mould

✓ ☐ high energy demand and energy bills (please provide recommended values referring to ADL volume 1 Table 4.3)

☐ other (please provide further details)

Question 36. Do you wish to provide any evidence on the impacts of these proposals including on viability?

a. Yes (please provide evidence)

b. No

HBF supports all measures towards reasonable and achievable building improvement and enhancement which include a healthy and sustainable home environment both in terms of human health and energy affordability in an environmentally healthy living space. It is important that government recognise the importance of viability

and feasibility studies being undertaken within the scope of redevelopment and material change of use of existing buildings. If requirements are too high for developers to achieve then there is a risk of potentially suitable buildings remaining undeveloped and not therefore contributing to the much needed new housing in the UK.

Question 37. Do you agree that a BREL report should be provided to building control bodies if we move to energy modelling to demonstrate compliance with MCU standards?

a. Yes
b. Yes, and photographic evidence is needed
c. Yes, and I'd like to provide further information
d. No (please provide justification)

HBF agrees in principle with the inclusion of the BREL report to building control bodies to demonstrate compliance with MCU standards. It would provide a recognised standard and consistent approach across new build and refurbishment and change of use building types.

Question 38. Do you agree that consumers buying homes created through a material change of use should be provided with a Home User Guide when they move in?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF supports the inclusion of a Home User Guide being provided to consumers purchasing a new home created through a material change of use or building redevelopment. Many home builders already provide a Home User Guide to new homeowners in this scenario so any change in legislation would align both new build properties and material change of use properties with more consistency and provide potential purchasers with recognisable and comparable information when making a purchase choice.

Question 39. Do you agree that homes that have undergone an MCU should be airtightness tested?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF does not believe it is realistic to impose airtightness testing on MCU buildings. Each building is different. It is important to recognise therefore that different buildings and different construction types act and respond in different ways to one another in terms of heating, ventilation and the passage of air and moisture. It is not wholly fair to impose such a single blanket requirement into a building regulation that affects so many potentially varying construction types across the whole of the UK. While the principal of improving airtightness could be deemed a positive one, the reality could be that damp and mould is consequently introduced into a habitable space because the properties of the existing structure responds differently as a consequence of the building conversion undertaken from its original performance requirement. Single wall construction and historic construction methods in particular rely on air flow and the breathability and passage of air through the building fabric. The introduction of such a measure could prove to be problematic for the home occupier as well as costly for the builder or developer to remediate environmental and construction matters once a building is fully complete. It is for these reasons that the HBF do not support airtightness testing in MCU buildings.

Question 40. Do you think that we should introduce voluntary post occupancy performance testing for new homes?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF understands the need for government along with builders, developers, engineers and designers to better understand how a new build property functions in a real life scenario following completion of the design and construction stage.

It is widely acknowledged that there can in some instances be a 'performance gap' between an as-designed property and an as-built property. However, HBF also voices some caution in this regard, as new technologies and new living and behaviour patterns will be required in new homes as we move towards the FHS. Educating new homeowners around how their FHS property functions will take some time to establish. Home User Guides together with introductions and guidance to new build properties will be carried out by home builders to new homeowners' in the same way that they always have done. However, HBF is mindful that any changes in lifestyle patterns and behaviours that are not embraced together with post occupation testing could lead to an homeowners expressing concerns to developers around perceived build quality and build compliance issues despite being constructed and approved at build completion stage.

HBF understands that the Government currently does not have detailed information available but are exploring different options for post occupation performance testing but could include Smart Meter Enabled Thermal Efficiency Rating (SMETER) technology. HBF would in principle support this initiative to understand the performance gap between 'as designed' and 'as built' new build properties together with understanding human behaviour and living and lifestyle patterns that may be associated with the same. HBF therefore agrees with a voluntary involvement from industry.

Question 41. Do you think that the government should introduce a government-endorsed Future Homes Standard brand? And do you agree permission to use a government-endorsed Future Homes Standard brand should only be granted if a developer's homes perform well when performance tested? Please include any potential risks you foresee in your answer.

a. Yes
b. Yes, and I want to provide additional suggestions or information
c. Yes, but I think there are risks associated with introducing a government-endorsed brand
d. No (please provide justification)

HBF generally does not agrees with the Governments introduction of a Future Homes Standard brand to any property built to the FHS. The FHS is multi-faceted approach to construction. It should be made clear that construction achieving the FHS does not guarantee homeowners with zero bills or a specific cap on utility costs. Furthermore, the area of new technology and renewable domestic technology is a fast moving arena. It is anticipated that advancements in new technologies will accelerate over the next few years and as such there will be a constant changing landscape in terms of how properties perform and how different developers are able to approach achieving the FHS in building construction and building technology.

Concern has been raised with the introduction of a type of FHS branding from our membership. Building regulations have never been allocated a badge or an identity in the past despite being current, up to date and as safe as can reasonably be practicable to the latest requirements. There is caution in the industry that creating

a logo will enforce developers and home builders to utilise this type of identity everywhere and could enter the wider planning system and wider political areas of influence. Should this type of identity be introduced within the FHS, then a similar initiative could be introduced for other building regulation areas and new policy requirements. The purpose of building regulations should be to ensure new homes are safe, efficient and meet relevant standards and expectations of the day. These regulations evolve over time, but a government-endorsed brand for FHS properties implies that previous properties are inferior. The notion is therefore not generally supported by industry as it is not considered necessary. HBF believe the final completion certificate is adequate proof that the new home has been built to current and compliant standards. The creation of a brand for FHS would set a precedent that could see a situation where new homes are labelled with many different badges to denote the precise vintage of approved document that was in place when the home was constructed. Building regulations already provide these assurances and can be relied upon by consumers.

As discussed elsewhere, HBF has encouraged mortgage lenders to adopt new approaches and practices in relation to energy efficient properties. We would expect that relevant certification and the very presence of enhanced building regulations should provide mortgage lenders and valuers with adequate confidence that a new home meets the FHS without the rigmarole and bureaucracy involved with government-owned brands and badges.

Question 42. Do you agree with the proposed changes to Approved Document F, Volume 1: Dwellings to improve the installation and commissioning of ventilation systems in new and existing homes?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF broadly agrees with the proposed changes to Approved Document F, Volume 1: Dwellings to improve the installation and commissioning of ventilation systems in new and existing homes but has reservations about the technical deliverability in some instances. There will be difficulty in restricting the ventilation length of duct runs in decentralised MEV systems to less than two metres to improve system performance and we do not support this element of the consultation. Whilst this may be aspirational or desirable, the reality is that many dwellings will not be able to cater for such short duct lengths given the layout and internal location of wet rooms, kitchens, bathrooms and WC's. Responses were provided previously in this regard where mid terraced properties for example will struggle to adequately provide ventilation to bathroom and WC's. The outcome here is that introducing such a short requirement on ventilation pipes could lead to the loss of entire house types and variation styles as they will no longer be able to comply with regulations.

Consideration needs to be given to the location and siting of the extract ventilation system within any given room in order to adequately capture and extract warm moist air. Flexibility needs to be given to extract duct lengths and two metres ought to be guidance rather than a regulation. Extract ventilation systems are regularly tested to five metres in length and HBF do not therefore support the consultation in restricting ventilation to two metres in length. It is also not always possible to gain straight line runs of ducting through a building fabric. With so many more pieces of equipment, drainage, services and utilities running through a property there are more building services present in new build properties todays than at any other time in the past. It would be preferred by industry if rigid, semi rigid and occasional flexible ducting could be permitted in instances where straight line ducting runs cannot be accommodated and in lengths up to and including five metres.

Question 43. Do you agree with the proposal to extend Regulation 42 to the installation of mechanical ventilation in existing homes as well as new homes?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification).

While not opposed to the proposal, HBF considers that it would be very difficult to install and commission centralised mechanical ventilation in existing homes. The logistics required in order to deliver the physical installation of cMEV and cMVHR systems in existing properties makes it highly unlikely that it would regularly take place. Such an operation may be more successful in a redevelopment scenario such as in a Material Change of Use (MCU) building, but less likely in 'existing homes'.

Question 44. Do you think the guidance on commissioning hot water storage vessels in Section 8 of draft Approved Document L, Volume 1: Dwellings is sufficient to ensure they are commissioned correctly?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF agrees with the guidance provided in draft Part L, Section 8. It is likely that the continued level of service and standard for installation and commissioning of heating infrastructure into a new build property will remain for the FHS to that already in place. Currently any heating device is correctly fitted and installed. This is then tested for correct and adequate function before being finely adjusted or balanced for each radiator or convector in operation. Finally the system is signed and certified by the approved installer. This process is currently fully operational and in place for new homes and is a requirement of building control that an adequately certified installer has commissioned the system for building sign off. A copy of the install and commissioning certificate is provided to the new homeowner. It is therefore anticipated that this same arrangement will continue for heat pumps and any associated hot water storage vessel in new homes under the FHS.

Question 45. Are you aware of any gaps in our guidance around commissioning heat pumps, or any third-party guidance we could usefully reference?

a. Yes (please provide further details)
b. No

HBF is not aware of any gaps or missing pieces of guidance around the commissioning of heat pumps that is not included within the draft approved document.

Question 46. Do you think the guidance for commissioning on-site electrical storage systems in Section 8 of draft Approved Document L, Volume 1: Dwellings is sufficient to ensure they are commissioned correctly?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF believes that guidance as detailed within MCS MIS 3012; The Battery Standard (installation) is the correct standard for government to reference in the draft Approved Document. Correct placement, fixing, connection and commissioning is required for energy storage devices. This will generally appear as a new piece of energy infrastructure into new build dwellings within the FHS that has not been widely included in new housing of the past. It is therefore relevant that government provide a reference standard that contractors and developers can align with for its safe commissioning.

Question 47. Do you agree with proposed changes to Approved Document L, Volume 1: Dwellings and Approved Document F, Volume 1: Dwellings to (a) clarify the options for certifying fixed building services installations and (b) set out available enforcement options where work does not meet the required standard?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF agrees with the proposed changes to Approved Document L, Volume 1: Dwellings and Approved Document F, Volume 1: Dwellings to clarify the options for certifying fixed building services and installations within new build dwellings. Both options available provide adequate scope for contractors and subcontractors to align and meet with the required standards. The two options available also provide flexibility and reasonableness in order for dwellings to be correctly commissioned so that they are able to operate efficiently and to optimum standards. HBF agrees with government providing building control approvers with the correct channels and clarity around enforcement options where these standards have not been met. It is essential that, in order for the new homes standard to become effective, that the installation and commissioning of heating systems are correctly made.

Question 48. Do you think the additional information we intend to add to the Home User Guide template, outlined above, is sufficient to ensure home occupants can use their heat pumps efficiently?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF believes the additional information intended to be provided within the Home User Guide Template is sufficient and reasonable in order to ensure home occupants can use their heat pump efficiently. New home users are generally also shown around a new build dwelling as part of the purchase sale and hand over process. An introduction and guide to how the new build property operates is also a standard procedure for any home builder selling a new build property. An insight, demonstration and advice are always given as part of this process to a new homeowner.

Question 49. If you are a domestic developer, do you use, or are you planning to use, the Home User Guide template when building homes to the 2021 uplift? Please give reasons in your response.

a. Yes (please provide further details)
b. No (please provide further details)

As a trade body, HBF does not use a Home User Guide. However, HBF members do use Home User Guides as a matter of course as part of the sale of a new home and have been providing these detailed pieces of literature for many years upon the handing over of a new dwelling to homeowners. It is an important part of the sale process and organisations working in partnership with housing associations and registered providers must, by contractual agreement, provide these important guidance documents for new home occupants.

Question 50. Do you have a view on how Home User Guides could be made more useful and accessible for homeowners and occupants, including on the merits of requiring developers to make guides available digitally? Please provide evidence where possible.

a. Yes, (please provide further details)
b. No

HBF agrees with the principle of providing hard copy Home User Guides for new home users. This type of information is also already frequently provided digitally such as in (.pdf) format as a one-off process for either new customers or for housing associations and registered providers. However, HBF would not support the legal requirement for new home builders to maintain and keep available Home User Guides in perpetuity for subsequent homeowners to be made available into future years. It is not reasonable nor practical for developers to host, operate and maintain digital web-based platforms forever. Homes pass into new ownership, adapt and replace wired, fixed and hard plumbed infrastructure into a new home and it would not be relevant to maintain digital information on all individual new build dwellings into future years. Product manufacturers already maintain .pdf and other digital information of their own products as previously discussed in this consultation. HBF believes that this is sufficient available information for homeowners, as products are frequently replaced after the warranty period. HBF recognises that home builders are often responsible for building standards for the first two years and warranty providers for the remaining eight years following the creation of new build homes. HBF believes that this is sufficient and should not extend to also capture Home User Guides and accompanying digital information.

Question 51. Do you think that there are issues with compliance with Regulations 39, 40, 40A and 40B of the Building Regulations 2010? Please provide evidence with your answer.

a. Yes (please provide justification)
b. No (please provide justification)

HBF believes that this area is already covered by what will be known as building control registered approvers and registered building inspectors as part of their duty in monitoring the construction and final completion process of a new build property. Approved installers provide the developer or homeowner with their commissioning and electrical certificates. This information is collected and inspected by the registered building inspector. The developer keeps copies and provides new homeowners within the Home User Guide and home hand over pack. HBF believes that there are no significant concerns in this regard and existing systems are already in place that fully address the matter.

Question 52. Do you think that local authorities should be required to ensure that information required under Regulations 39, 40, 40A and 40B of the Building Regulations 2010 has been given to the homeowner before issuing a completion certificate?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF believes that local authorities should not be required to be provided with evidence that relevant information under regulations 39, 40, 40A and 40B of the building regulations 2010 has been provided to the homeowner before a completion certificate is issued. The current arrangement operates entirely adequately where the handover of information together with commissioning certificates of operating systems within a new build property is inspected by the approved inspector ahead of final certificate being awarded under their duties in performing as building control approver. This information is handed to the new home owners upon handover in a handover pack following the issuing of a final certificate. There is no reason for evidence of this information to be required to be seen by the local authority prior to the issuing of a completion certificate as it is already captured under the duties of building control.

Question 53. Do you agree that new homes and new non-domestic buildings should be permitted to connect to heat networks, if those networks can demonstrate they have sufficient low-carbon generation to supply the buildings' heat and hot water demand at the target CO2 levels for the Future Homes or Buildings Standard?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF believes that developers and individual new homeowners should be able to have the opportunity to choose whether to connect onto heat networks where and when those heat networks become available in the future and where those networks can prove and demonstrate that they have sufficient low carbon generation to supply the buildings with adequate heat and hot water supply at the target CO2 levels as set by the FHS. We do not believe it should be mandatory for new homes to connect onto new or existing heat networks.

Question 54. Do you agree that newly constructed district heating networks (i.e., those built after the Future Homes and Buildings Standard comes into force) should also be able to connect to new buildings using the sleeving methodology?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF does not agree with the proposal that newly constructed district heat networks built after the introduction of the FHS should also be able to connect to new buildings using the sleeving system of newly installed low carbon plant and equipment or alternatively existing plant that can demonstrate capacity and unused. The reasons for this is the future cost and constraints associated with the adaptation required in the homes together with the matter that new homes are already incredibly energy efficient and it is considered that there would be a disproportionate amount of disruption required to roads, footpaths, wider infrastructure relative to delivering an energy source that is already extremely low and environmentally friendly to the household.

Question 55. Do you agree with the proposed guidance on sleeving outlined for Heat Networks included in Approved Document L, Volume 1: Dwellings and Approved Document L, Volume 2: Buildings other than dwellings?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF does not agree with the proposed guidance on sleeving as outlined for Heat Networks within Approved Document L, Volume 1 for new build residential dwellings. The home building industry recognises the importance of heat networks having to demonstrate low carbon energy generation or available unused capacity that can serve new build properties via connections onto existing heat networks. However, they do not consider future available capacity to be relevant to be served onto previously constructed new homes i.e. existing homes at that future point in time for the reasons given above in question 54.

Question 56. Do you agree that heat networks' available capacity that does not meet a low carbon standard should not be able to supply heat to new buildings?

a. Yes
b. No (please provide further details regarding how this unused higher carbon capacity should be accounted for)

HBF provisionally agrees with this approach. However as the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the operational delivery of national energy and energy regulators in domestic and non-domestic buildings in the UK.

Question 57. What are your views on how to ensure low-carbon heat is used in practice?

HBF believes that, in order to ensure that low carbon heat is used in practice in the construction and delivery of new homes in the UK, government needs to provide adequate access and legislation for new homes to begin to move towards becoming less reliant on wider connections to the national grid and heat networks. In order to ensure that low carbon or zero carbon is met in new or existing residential housing, new dwellings will ultimately need to move towards an environment where homes are entirely self-sufficient in energy and heat generation. This is a movement towards passive house standards and 100% energy generation via photovoltaic or other renewable technology methods.

In order for low carbon heat and renewable technology to be a success with the owners of new homes, the financial benefits of their use needs to be shown and demonstrated to them from reliable and proven means. Only then will homeowners and the wider public truly embrace a new way of living under a green future.

It is also relevant to make clear that as the national electrical grid continues to decarbonise towards 2035, there is a consideration that Heat Networks may begin to become less relevant and the associated costs of developing and engineering of these features around the country could be better invested into green alternative technology to support capacity and transition within the national electrical grid.

Question 58. Are there alternative arrangements for heat networks under the Future Homes and Building Standards that you believe would better support the expansion and decarbonisation of heat networks?

HBF agrees with the current arrangements being proposed under the Future Homes and Buildings Standards that support the expansion and decarbonisation of heat networks. However, as the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the operational delivery of national energy, heat networks and energy regulators in domestic and non-domestic buildings in the UK.

Question 59. Do you agree that the draft guidance provides effective advice to support a successful smart meter installation in a new home, appropriate to an audience of developers and site managers?

a. Yes
b. No

If not, please provide suggestions for how the draft guidance could be improved. Please provide evidence and sources for your statements where appropriate.

HBF understands that smart gas and electricity meters are already being provided in new build properties and have done so for almost 15 years. We do not feel that additional guidance is now needed so long after the

technologies' introduction within new residential housing in the UK. Furthermore, with the exclusion of gas and other fossil fuel sources being installed into new build properties from 2025, it is apparent that more room will inevitably be available for the housing and siting of electrical smart meters and associated communications technology. It is noted that Part R of the building regulations came into force in England on the 26 December 2022. HBF believes that any communications guidance around space and siting should have been included within that regulation update and should not cross over into Part L guidance under this consultation. HBF does not feel this draft guidance will help deliver effective advice around smart meter installation which is already being fully installed in new build properties. Rather it will simply add to the already voluminous level of literature, guidance and reference material from government which is not considered helpful to industry when endeavouring to deliver the Government's housing targets in the clearest and most efficient way.

Question 60. Do you agree that voluntary guidance referenced in draft Approved Document L, Volume 1: Dwellings is the best approach to encouraging smart meters to be fitted in all new domestic properties?

a. Yes
b. No

If not, is there anything else you think the government should be doing to ensure that smart meters are fitted in all new build properties?

Our answer to this question is outlined in our detailed response to question 59 above. A simple worded requirement for the use and installation of smart meters in all new residential premises is all that is deemed necessary to ensure this is followed. No additional reference designs, guidance or schematics are needed to help deliver this.

Question 61. Do you agree that it should be possible for Regulation 26 (CO2 emission rates) to be relaxed or dispensed with if, following an application, the local authority or Building Safety Regulator concludes those standards are unreasonable in the circumstances?

Yes
No (please provide justification)

HBF agrees with the proposal that it should be possible for Regulation 26 (CO2 emission rates) to be relaxed or dispensed with if, following an application, the local authority or Building Safety Regulator concludes those standards are unreasonable in the given circumstances.

Question 62. [If yes to previous question], please share any examples of circumstances where you think it may be reasonable for a local authority to grant a relaxation or dispensation?

Some examples that may be considered reasonable for relaxation of Regulation 26 could be where a new housing development has an opportunity to connect onto an existing heat network that plans to decarbonise fully or partially at a future point in time. It could be considered unreasonable to miss out on a long-term solution for the short term circumstances. Due regard to the future intention of an existing heat network to reduce carbon would need to be considered. Other scenarios where consideration of same may be of relevance could be where trial houses are proposed for inclusion in test housing using hydrogen fuel or low carbon energy sources from industry and commercial facilities. While these technologies may occupy carbon sources, it would offer an opportunity for new residential dwellings to make 100% use of second-hand heat and energy that would otherwise have dispersed to atmosphere. It is therefore entirely relevant that consideration towards relaxation should be awarded in these circumstances.

Question 63. Do you think that local authorities should be required to submit the applications they receive, the decisions they make and their reasoning if requested?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF agrees that local authorities should be required to submit the applications they receive and the decisions they make and the reasoning around this to government possibly via the Building Safety Regulator. The reason for this is to gain consistency and transparency that different new build houses around the UK can expect to receive the same degree of fairness and consistency in their respective applications with authorities when looking for relaxation around Regulation 26.

Question 64. Are there any additional safeguards you think should be put in place to ensure consistent and proportionate use of this power?

HBF believes that a description and associated guidelines to authorities and the building safety regulator could be helpful in order to gain consistency around the type and scope of schemes and situations whereby relaxation of Regulation 26 could be considered.

Question 65. Do you agree that Part L1 of Schedule 1 should be amended, as above, to require that reasonable provision be made for the conservation of energy and reducing carbon emissions?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF agrees with the proposed wording under draft Part L1 of Schedule 1. It is noted however that greenhouse gases included within the proposed wording was also already itemised in the original description under item (b) (ii) 'minimise greenhouse gas emissions' and may not therefore require a change. Nevertheless HBF agrees with the aims of these proposed amendments.

Question 66. Do you agree that regulations 25A and 25B will be redundant following the introduction of the Future Homes and Buildings Standards and can be repealed?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF agrees that regulations 25A and 25B *could* become redundant following the introduction of the FHS and could potentially be repealed. As new build properties will be built to zero carbon ready, no new or additional work will be necessary to the properties to ensure they have zero carbon emissions as the national grid continues to decarbonise. Low to zero carbon heating will be installed in the vast majority of new homes and renewable energy generation will continue to grow throughout the UK especially in new build homes. However, if an opportunity were to be offered within the proposed legislation to allow a consideration towards other types of renewable technology or enhanced or alternative technology then retention of Regulation 25A could continue to be a helpful route for Government to retain within the FHS. As previously set out in this consultation there

may be occasions where opportunities exist where some PV or alternative types of renewable technology can be applied in new build dwellings that contrast with the two contender specifications of option 1 and option2 but are still of significant benefit to both the customer and the environment in terms of energy reduction. In these scenarios it would be helpful to demonstrate a retain a consideration towards an alternative construction specification which can demonstrate how it has been achieved. HBF believe therefore that there is merit in consideration towards retaining Regulation 25A & 25B of the Building Regulations.

Question 67. Do you agree that the Home Energy Model should be adopted as the approved calculation methodology to demonstrate compliance of new homes with the Future Homes Standard?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF believes that there should be a cautious approach to embracing a new energy calculation tool alongside such a significant step change in building regulations that has already, inevitably led to a period of rapid innovation. Many members have raised concerns and would prefer that the Home Energy Model (HEM) were not adopted, in the immediate term, as the approved calculation methodology assessment tool for new homes to demonstrate compliance with the FHS.

There has been caution raised in recent years surrounding the accuracy and useability of the Standard Assessment Procedure (SAP) calculation which is now over 30 years old. The current SAP 10.2 is causing industry frustration with its lack of flexibility and inability to recognise certain environmentally friendly technologies that help reduce carbon usage within new build dwellings. Nevertheless, it is still the only recognised operating system for measurement against the current building regulations. Industry has raised concern over the introduction of a new standard together with the useability of the HEM software and its ability to be utilised early enough by industry. For a period of such significant innovation, with new materials and products to be occurring in conjunction with a totally novel, untested and very much untried new energy calculation tool is the cause of considerable nervousness for industry as companies consider major investments without adequate information on what emerging inputs into the model will generate in terms of a projected performance output.

The currently proposed approach which, in the absence of a reliable model, sees industry effectively required to make educated guesses about performance measures and with such little time planned between finalisation of the regulations and implementation on site risks creating the conditions for house building to slow down or even stall due to the additional layers of risk being applied.

It is industry's preference is that the SAP platform is further considered as an option to be continued and refined accurately rather than to introduce a new thermal calculation and entirely. This would allow for a more planned approach to the introduction of HEM which could be influenced by an existing FHS.

It is understood that the early version of HEM utilising the BETA version has many issues and difficulties around effectiveness and accuracy. This has been reported to DESNZ during this consultation and amendments have been made during the course of the consultation. It is, of course, to be acknowledged that the introduction of any new model will be something of an iterative process, but the scale and speed of this introduction, alongside such significant regulatory changes is very risky, both in terms of the industry's ability and confidence to deliver to FHS, and in relation to the reputation of the new standard and to its sponsoring department.

Whilst issues and adjustments may be understandable at this early stage, the home building industry is concerned about the time frames associated with delivering a final workable format to industry. Without a fully

working and proven HEM thermal calculator available to industry to fully test, it is difficult to provide any meaningful feedback within this consultation as to which option of the construction specification can work best for industry and homeowners of FHS properties. Industry experts have struggled to model and capture fundamental elements of a new build dwelling to act properly within the scope of the formulae within the thermal software. Again, without this being fully resolved and proven, it has become clear that accurate feedback cannot be provided for the consultation meaning that neither of the two proposed specifications can accurately or reliably be informed upon.

In addition, training, upskilling, new learning together with re-licencing requirements will be required with the introduction of the new HEM software for all UK based energy assessors. Familiarity and speed will also be required by energy assessors in order to get themselves to a position of certainty with the interface and inner workings of HEM. It is understood that the work required to carry out a HEM assessment can take between six to eight hours per house type. This is in contrast to the current situation with SAP which can be carried out more quickly with at a lower intensity for assessors. It is a further concern for industry that HEM would be introduced too late in the process aligning with the roll out and introduction of Part L. Due to the reasons already given, it is important for the home building industry that HEM be made available at least 12 months ahead of the FHS legislation coming into effect. This would represent a sensible and commercially reasonable timeframe because it will take industry a time to redraw, amend and change building designs, specifications, portfolio house types together with all accompanying requirements to meet and align with the new standards tested through HEM. If this is not introduced at least 12 months prior to the roll out of the FHS then it is likely to cause significant delay to the continuation and delivery of new homes.

Question 68. Please provide any comments on the parameters in the notional building.

HBF agrees that a sensible and pragmatic approach would be to continue with the notional building specifications however this can only realistically take place once an accurate and proven HEM is available. A reliable HEM would provide industry and designers with a starting point from which more detailed opportunities and solutions can be delivered. However, the industry has raised concerns surrounding the prescriptive nature of the Option 1 building specification which effectively requires high efficiency solar PV panels covering the equivalent 40% of ground floor area. This is unworkable with many important property types such as bungalows or those with a larger roof areas. Equally it conflicts with smaller properties such as maisonettes and starter homes or properties occupying a room in the roof. This type of conflict could create a scenario whereby entire categories of housing will effectively be impossible to build in England such as two and a half and three storey housing that occupy dormers, hip roofs, gables, chimneys, intricate roof designs or glazed roof lights due to the incompatibility with the 40% PV of floor area ratio requirement.

The notional building is also considered to limit design flexibility and innovation of other renewable technologies. It increases the risk of certain house type designs becoming unviable. It would be considered more practicable to consider an allowance towards 'pre-energy demand' or alternatively consideration towards delivering 'some' PV or alternative renewable energy on new build properties but not necessarily at the 40% threshold. This approach would deliver a more meaningful, flexible and practical scenario whilst still embracing the aspiration and direction of government in reduced energy usage in a new build property within the FHS.

In addition to the above, it is relevant to add that a 'notional building specification' could be considered too prescriptive. This could result in less innovation in construction including in the development of design, new materials, products and innovation more generally.
Electing Part L to favour only Option 1 of the notional specification also limits design opportunity and increases the risk of building over simplistic roof designs which can cause conflict with Local Planning Authorities (LPAs) in their often highly specific notions of good place making, street schemes and vernacular.

The current consideration under this consultation could also penalise those properties not orientated to face due south. Here an additional provision of PV would be required to make up any energy deficit quickly reaching levels of 60% to 70% or more on roofs which is not practical or realistic in real life scenarios. Some consideration should therefore be given to allowing 'some PV' or to retain the opportunity to construct to Option 2 if justification can be demonstrated and alternative sources of renewable materials considered as mentioned previously.

A site design or streetscape with all dwellings planned to face due south may not be deemed by all LPAs to offer adequate design credentials. We would therefore encourage government to look at the likely practical planning consequences of the measures being consulted on, If Option 1 is to be pursued, and Government is comfortable with the potential consequences, then planning direction should be given to LPAs to ensure that councils are aware that the Secretary of State's priority is for the FHS to be delivered and that the requirements therein should supersede local considerations.

Question 69. Minimum standards already state that heat pumps should have weather compensation and we would like to understand if stakeholders think this is enough to ensure efficiency of heat pumps under the varying weather conditions across England. Should the notional building use local weather?

a. Yes
b. No

Please provide any evidence you have on the unintended consequences that could arise as a result of using local weather in the notional building. If possible, please comment on the impact on the construction industry in terms of design and building feasibility. We also welcome views on whether weather compensation is sufficient to ensure heat pump efficiency.

It is our view that heat pumps fitted with weather compensation is correct and adequate for adjustments needed for minor weather variances across the UK. This is consistent with previous industry approaches which have proven to be successful for industry and end users. HBF and its members are not supportive of the local weather files and the associated software used within Approved Document Part O and the notional building specification. In the scheme of things, there is very little weather change across England for the purposes of house building with the UK occupying a very small geographical land mass area where weather is generally consistent across the country. In addition, the increased cost and burden of providing, in effect, regional specifications and building standards across different counties of England represents a disproportionate impact on businesses and sets an unhealthy precedent for the future. It seems unreasonable and unnecessary to construct the same properties to different building specifications and standards which will increase the cost to house builders and dramatically overcomplicate an already technical and challenging building control process. A more sensible approach has always been acknowledged with increased design and performance requirements to those properties located within close proximity to coastal areas or elevated locations for storm events and frequency and intensity of inclement weather. However, adopting regional weather files as standard across England is not deemed necessary for low rise domestic properties.

Question 70. Do you agree with the revised guidance in The Future Homes Standard 2025: dwelling notional buildings for consultation no longer includes the average compliance approach for terraced houses?

a. Yes
b. No

HBF does not agree that the revised Part L FHS removes the average compliance approach for terraced houses. We do not believe that there is a significant enough of a change that requires the removal of the average compliance approach to terraced properties.

Question 71. Do you agree with the revised guidance in Approved Document L, Volume 1: Dwellings which states that you should not provide a chimney or flue when no secondary heating appliance is installed?

a. Yes
b. No

Please provide any further evidence.

HBF does not see this as a particularly significant matter however there may be planning, heritage or listed building requirements needed for this area to be retained. We do not see it as a highly sensitive matter and new homes are able to achieve compliance more successfully with regulations and heating performance without the inclusion of chimneys and flues, however consideration should be given to retaining this ability within the regulations in order for them not to become too prescriptive and lack flexibility based on a scheme's particular design requirements or unique circumstances with local authority planning departments.

As per HBF's response to question 68, the Secretary of State should forcefully make clear that this supersedes local design vernaculars to avoid drawn out debates at a local level about design requirements.

Question 72. Do you agree with the proposed approach to determine U-values of windows and doors in new dwellings?

a. Yes
b. No

Please provide any further evidence.

HBF does not agree with the proposed approach to change the U-value determination in doors and windows under the new Home Energy Model (HEM). HBF prefers to continue to use the default values as commonly used within SAP 10.2 table 6 and to be available to use going forward for standard door and window configurations.

Under the new proposals small windows will be disproportionately discriminated against whereby small windows which occupy a smaller frame to glazing ratio will have a negative thermal calculation made against them. Glazing occupying better thermal properties than its framework counterpart will see a situation where a wall that occupies a small window will be scored negatively against in terms of thermal value. This however is not a true reflection on the overall thermal performance of the home. A wall which occupies a small window will have better thermal properties than a wall with a large window due to wall u values being better performing than windows. Thus the smaller window would be more beneficial for the property in term of its overall whole house thermal performance. This distinction is not made or recognised under the current proposals. This means it is likely that small windows will unlikely be a feature in new housing going forward under the current formulation which appears to be an unintended consequence of the HEM. Any window occupying mullions, cross bars or any type of character feature such as Georgian, heritage or cottage style windows will again be discriminated against with a requirement to provide a low U value of 1 or more. This type of requirement in thermal performance cannot be achieved with a high-performance double-glazed unit. This approach will see the introduction of triple glazed windows in new build homes which will bring about an increase in cost, a manufacturing and resource issue in addition to weight, loading and fitting issues on site. The increased weight

of a triple glazed window will negatively impact the construction of new homes with logistics and fitting on site in addition to customer experiences of hanging and balancing of the window leaf itself given the increase in weight. Triple glazing units generally require a re-enforced steel frame for the increased weight of the glazing unit which again impacts the thermal properties of the actual frame itself with increased cold bridging. The thermal benefits of triple glazed windows will be significantly offset against the cost and logistics of their fitment on such low thermal increments of 0.2 or 0.3 U value change. For these reasons, high performance double glazing is still the preferred choice of the industry.

Question 73. Do you agree with the proposal to remove the default y-value for assessing thermal bridges in new dwellings?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

HBF does not agree with the proposal to remove the default Y-value for assessing thermal bridging in new build dwellings.

Question 74. Do you have any information you would like to provide on the homes built to the Future Homes Standard using curtain walling?

HBF does not have adequate information available to comment upon in relation to specialist curtain wall systems other than they are generally not used commonly in new build residential properties and are more prevalent in commercial type premises and are therefore unable to comment in this area.

Question 75. Do you agree with the methodology outlined in the NCM modelling guide for the Future Buildings Standard?

a. Yes,
b. No (please provide justification)

As the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 76. Please provide any further comments on the cSBEM tool which demonstrates an implementation of the NCM methodology.

As the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 77. Please provide any further comments on the research documents provided alongside the cSBEM tool and which support the development of the NCM methodology, SBEM and iSBEM.

As the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to the delivery of non-domestic buildings in the UK such as retail, commercial, employment or industrial building use.

Question 78. Which option describing transitional arrangements for the Future Homes and Buildings Standard do you prefer? Please use the space provided to provide further information and/or alternative arrangements.

a. Option 1
b. Option 2

Please provide further information or suggest alternative transitional arrangements with your rationale and supporting evidence.

Option 2 is preferred by HBF between the laying date of the FHS regulations and publication of the full technical specification and the regulation coming into force. It is understood that this will then be furthered by a 12 month transitional period for implementation on individual dwellings on a construction site. Option 2 provides industry with a potential two year window which would enable industry to make arrangements with designers, engineers, product manufacturers and installers as well as arrange the necessary purchasing agreements with product manufacturers and energy infrastructure providers. Such a timescale would still offer industry a tough challenge to be able to deliver the future homes standard in new residential housing.

It would be preferred by industry to consider allowing a two year transitional arrangement alongside Option 2 providing industry with a three year total period to deliver the FHS. The industry is still adjusting to the current Part L 2021 brought in in June 2023 where a 31% uplift in building performance was implemented and so some further flexibility than those being offered would be preferred by industry as we successfully transition towards an 80% improvement on building standards. However, before the government can embark on a roll out of time frames and transitional arrangements, house builders need to see a fully compliant and working HEM model in function and operation in order to be able to provide meaningful feedback to the construction of specifications. Following that, HBF would be supportive of option 2 transitional arrangement and its associated time scales being considered by government.

Question 79. Will the changes to Building Regulations proposed in this consultation lead to the need to amend existing planning permissions? If so, what amendments might be needed and how can the planning regime be most supportive of such amendments?

a. Yes (please provide further information)
b. No

It is already being experienced by home builders around England that local authorities are not embracing the new technologies and the changes required to meet the new regulation demands of new housing. HBF is aware of many situations in which local authorities are requiring developers to reapply for full planning consent to take account of the presence and location of photovoltaic (PV) panels being fitted to properties in addition to gaining new consents for the presence and siting of heating sources such as air source heat pumps and differing window styles, depths and other minor fabric changes. Despite central and regional governments supposedly moving towards a more environmental based approach for new housing developments in policy and local plans, the same is not being experienced universally at a Local Planning Authority level.

It is observed that developers have never required planning consent to deliver water, gas and electricity to development sites in the past, yet many are now experiencing instances of local authorities insisting on consent for the siting of heat pumps and PV to energise properties. It seems unfair to HBF that its members are being financially penalised against with having to return for brand new consents despite approvals already being in place.

The consultation document discusses in tables 4.1 and 4.3 the notional building specifications. Within these typical examples the specification details the provision of PV performance equivalent to 40% of floor area. While it is recognised that there may exist a degree of flexibility to achieve and deliver this, there remains nevertheless a situation that requires specific planning consent in order to provide this type of feature and technology on a new build dwelling. It has consistently been the case over the last 30 to 40 years that new housing schemes must consult, liaise, negotiate and compromise scheme specific details that may include planning conditions around site layouts, materials, colour choices, landscape, architectural detailing and more. As we transition towards more environmental based housing and when also factoring in other building regulation changes such as Part F, Part M and Part O, these building regulation changes begin to affect the look, shape, orientation and visual appearance of buildings.

These regulatory changes are affecting new homes more today than ever before and it is critical for government to recognise the significance of this impact. It is of the utmost importance that local authorities do not deviate away from central and regional government objectives by placing barriers and restrictions on developers by imposing additional burdens on them in an effort to use the environmental changes as opportunity to raise additional funding for their departments. Home builders around the country are having to re-apply for planning consent to embrace the changes brought under this building regulation which will slow down and delay the delivery of new homes.

Consideration also needs to be given to listed buildings, conservation and heritage areas where special consent or dispensation will be required in order to deliver the future homes standard. There are many sensitivities surrounding development taking place under these circumstances and again central government will need to be made aware of the restrictions and difficulties that will inevitably be experienced by development being proposed in these areas. Government should be required to ensure that developers can expect to receive allowances or relaxation to development willing to be undertaken in these areas including building conversion, adaptation or redevelopment.

Question 80. Do you agree that the 2010 and 2013 energy efficiency transitional arrangements should be closed down, meaning all new buildings that do not meet the requirements of the 2025 transitional arrangements would need to be built to the Future Homes and Buildings Standards?

a. Yes
b. No (please provide justification)

HBF understands and agrees with the opinion of government in their objective to strive to deliver more energy efficient housing in line with current regulations. HBF recognises the importance of awarding transitional arrangements to enable industry to acquire the necessary skills, materials, designs and supply chains to deliver the regulations but are also aware of the need to provide customers and new home owners with the correct type of housing that is the most up to date in terms of regulations providing both environmental and financial benefits. HBF understands that the sunsetting arrangements discussed as part of this consultation will be introduced on those older developments previously benefitting from historic site wide transitional arrangements reaching back as far as 2010 & 2013. HBF understands and agrees with government that any historic properties that have not commenced physical construction as defined under new Regulation 46A of the Building Regulations 2010 will have to comply with the Future Homes Standard. This requirement also extends to capture and include those properties previously registered under Part L 2021 which have also not commenced by the end of the transitional arrangement awarded under this Part L 2025 FHS.

Question 81. What are your views on the proposals above and do you have any additional evidence to help us reach a final view on the closing of historical transitional arrangements?

HBF does not believe that any further mechanisms are needed regarding sunsetting arrangements or further definition on time frames associated with development site benefitting from historic transitional arrangements. HBF understands that developers use transitional arrangements, whether it be site wide or plot by plot, in order to gain greater clarity about ongoing development costs. HBF has spent much time engaging with various government working groups to explain the process surrounding this, how it is done and why it is done, together with the importance of understanding the land buying and development process. The entire process of housing delivery can take years to deliver which brings about huge risk to development and to developers. Builders therefore need assurance and cost certainty from the outset and that can only be provided by knowing which standards and regulations are required to be delivered. When standards are frequently updated, developers require transitional arrangements in order to be able to successfully deliver and without clogging an already struggling planning regime up with re-applications.

Government has already set out the details and provided clarity around the transitional arrangements associated with the introduction of the FHS in section 14.3 of this consultation. HBF believes this is sufficiently clear and no further detail, build by dates, or any other associated mechanism is required for the introduction of any updated building regulations. This can be further evidenced where the Government recently published their 'Commencement of Work; New Definition' in October 2023. From 1 October 2023, the Building Safety Act 2022 (Commencement No.5 and Transitional Provisions) Regulations 2023 commenced amendments to the Building Act 1984. These amendments mean that building control approval i.e. the Initial Notice on new building work lapses automatically after three years in respect of any work which has not commenced. This applies for work overseen by a local authority, private sector building control or the Regulator.

The Building Regulations etc. (Amendment) (England) Regulations 2023 introduce a new definition of 'commencement' of building work for new and existing buildings. This definition of commencement of work must be satisfied within three years of the application for building control approval being submitted to the building control authority. The definition replaces the previously recognised guidance outlined in building circular letters on what does and does not constitute commencement for the purpose of lapsing. It will be incumbent upon building control bodies to monitor and scrutinise whether the definition of commencement has been satisfied. A link to the government update on regulations under part 3 of the Building Safety Act 2022 can be found here. The lapsing of building control approval after three years would require a brand new initial notice and site approval to be secured by a developer. This would ensure that all properties outstanding and therefore captured by the new initial notice would be built to the current regulations in place at that time.

HBF therefore believes that with the changes to the Building Safety Act 2022 (Commencement No. 5 and Transitional Provisions) Regulations 2023 there are sufficient legal and legislative control mechanisms already in place to ensure that all new housing, regardless of which building regulation is updated, will always be built to the newest standards to within 3 years at any one time.

Question 82. Part O does not apply when there is a material change of use. Should it apply?

a. Yes
b. Yes, but only for some types of conversion (please list from reg 5a-k or describe the type)
c. No

Please provide more details about why Part O should/should not apply to a material change of use and, if possible, point to existing evidence/examples that demonstrates your view.

While overheating and building fabric performance is essential in new and existing buildings, HBF recognises that existing buildings undergoing material change of use, building conversion or renovations must can also be improved. However, it is never realistic to assume that any existing building can or will be able to perform against the same standards as a new build property. There are physical restrictions and significant factors within existing buildings that prohibit the fabric from ever being able to perform to the standards of new build properties. In addition to this, if a building is listed or located in a heritage or conservation area then heavy restrictions could exist that prohibit the significant alternations required that would enable an existing building to significant improve its fabric performance. Significant alternations could be introduced to an existing building in order to increase its performance however it is important to recognise that those alternations or fabric changes could prove to be financially unviable to developers relative to the cost of demolition and rebuilding from scratch.

HBF, whilst recognising the importance of improving building performance, is cautiously in favour of expanding Approved Document Part O to cover Material Change of Use dwellings, providing targets are adaptable enough to understand when it is not viable for elements of an existing building to fully comply for the reasons stated above. Each building is unique with its own set of constraints. For example, it may not be economically viable to replace existing glazing with units of a lower performing g-value. Other regions of the United Kingdom such as Scotland's Technical Handbook 3 uses the term 'as far as reasonably practicable' when requiring that conversion projects are assessed for overheating. This type of language is helpful for designers and developers as it provides an opportunity to explore the possibility of building improvement without the absolute need to deliver it on every occasion if it can be demonstrated on viability grounds or building appearance/conservation etc. HBF therefore supports some consideration towards Part O in building conversion and change of use if some leniency can also be provided to industry in the same regard within the regulation.

Question 83. Apart from material change of use, is there anything missing from the current scope of Part O?

a. Yes, (please provide justification)
b. No, (please provide justification)

HBF has collated the thoughts and experiences from our members and understand that the salient parts of Approved Document O could be captured more meaningfully under Approved Document Part K. Furthermore, the document has proven to be quite complex and contradicts other building regulations causing conflict in interpretation and design scenarios. HBF would support a review of the document aligning more accurately with other building regulations in a simpler format and language. Part O had had a significant influence on home design and elevation which has previously been raised with the Government. The industry has many times reported on the detrimental effect the regulation has had on existing approved housing schemes that have had to return to local government for planning resubmission having departed so significantly away from previously approved schemes in terms of design and appearance.

The 'simplified method' under Part O has caused designers and consultants a huge amount of conflict in design and construction. Industry has generally moved towards the more detailed TM59 calculation methodology however this is considered to be unnecessarily complicated and protracted for use within low rise residential dwellings and is a tool more suited towards commercial or retail building design. HBF would suggest that a full review of Part O be considered where the approved document is re-written or aligned or captured more closely with Approved Document K of the building regulations.

Question 84. Can you provide evidence on how the addition of extensions or conservatories to domestic buildings can impact overheating risk on an existing building?

a. Yes, (please provide justification)

b. No

Any significant building work to an existing building has the potential to attract additional heat or impose thermal detriment to the property. Both scenarios discuss the thermal performance, the range of materials used in the extension together with the orientation of the building. For example, conservatories are often built with glazed roofs dramatically increasing the heat during the day with solar gain only to have the opposite negative effect at night. Whilst advancements in building materials have been made in recent years, any adaption to an original building can vary the way it performs thermally.

Other examples may occur are where loft conversions or new build homes feature a room in the roof. A room in the roof will generally always be slightly warner in the summer and slightly cooler in winter than other parts of the main house. Minor temperature variances can also sometimes be experienced in non-habitable spaces such as the stairwell where loft conversion have been carried out. This can be attributed to rising heat and the thermal performance of roofs over walls. However, the benefit of homes occupying these types of rooms and additional spaces vastly outweigh any minor negative effect that may or may not be experienced by the user. It should be recognised that it is usually the homeowner's choice to carry out these changes and is therefore frequently a choice driven by the opportunity to create additional living space. HBF believes that Part O should not unduly control or take away a homeowner's freedom to change or adapt their home. Neither should it cause detriment to any homeowners looking to explore the opportunity in adapting their property to achieve more liveable space as both scenarios are preferable and should be encouraged over new construction and the high cost associated with this to the owner.

Question 85. We are currently reviewing Part O and the statutory guidance in Approved Document O. Do you consider there to be omissions or issues concerning the statutory guidance on the simplified method for demonstrating compliance with requirement O1, for buildings within the scope of requirement O1?

a. Yes (please provide justification)
b. No

HBF has referred to the simplified method and issues surrounding this in our response to question 83. Furthermore, we consider there to be too much of a step-change between moderate and high risk areas which makes the Simplified Method very difficult for industry to comply with where the development site is located within a high risk postcode to weather and solar gain. It is our view that the number of regions should be reconsidered. The need for shading to be provided in high risk postcodes or no shading elsewhere is not a realistic prospect for planning applications or for the construction industry to deliver. Guidance on when an opening can be considered open for the purposes of the Simplified Method calculation needs further clarification for industry to be able to respond more accurately. Whilst reasons have been given for re-writing Part O in its entirety, consideration is needed for its inclusion into the Home Energy Model so that conflict is not continued into the Government's new energy assessment model. Government should consider the inclusion of simplified calculation being converted into a HEM wrapper when development allows, as this will end discrepancies between different calculators and provide more cohesion across industry.

Question 86. Do you consider there to be omissions or issues concerning the statutory guidance on the dynamic thermal modelling method for demonstrating compliance with requirement O1 for all residential buildings?

a. Yes, (please provide justification)
b. No

Clarification is needed on certain rules which apply to the CIBSE guidance. For example, in Wales, AD-O specifies that Type I occupancy should always be used (for vulnerable occupants). The English version does not specify which occupancy pattern to use. Clarification is also needed regarding the sample rate of assessments on large schemes. There is no definition in Approved Document Part O of a suitable sample rate. A standardised reporting template for the TM59 data should be available so building control bodies can easily read and understand the contents of reports in order to base their decisions and approvals upon.

Question 87. Do you consider there to be omissions or issues concerning the statutory guidance on ensuring the overheating mitigation strategy is usable for buildings within the scope of requirement O1?

a. Yes, (please provide justification)
b. No

HBF has nothing to provide in this response as the current guidance is adequate in its current written form.

Question 88. Do you consider there to be omissions or issues concerning the statutory guidance on protection from falling?

a. Yes, (please provide justification)
b. No

HBF strongly agrees that Approved Documents should not contradict one other. The publication of Approved Document O with a 1.1m minimum height (upper floor level to bottom of opening) still causes confusion and difficulty in delivering accurate resolutions in new homes. Approved Document Part K was not updated in line with the incoming Part O and still states 0.8m minimum height. While the industry acknowledges that the latest Approved Document takes precedence over older documents, it should, nevertheless not conflict or cause confusion for all those involved including builders, designers, building control approvers and home owners. HBF would like to see Part K & Part O re-written to provide more cohesion and alignment for design and construction purposes at the earliest opportunity.

HBF would urge government to evolve all building regulations to align with one another to address the conflict areas across all regulations. Updating all building regulation at one time will help industry plan and adjust to the FHS with greater success without the continuous staggered approach being taken by government at the current time. Consideration towards this would be greatly appreciated by the HBF and its members.

Question 89. Are you aware of ways that Approved Document O could be improved, particularly for smaller housebuilders?

a. Yes, (please provide justification)
b. No

It is HBF's view that the Simplified Method approach generally does not work as intended. The targets in high-risk areas too extreme to be considered viable. It has been raised that small home builders and other SME developers, especially those in High Risk areas are having to invest in Dynamic modelling software incurring large expense which does not deliver value on return. We would be interested to see how Part O is considered and addressed under the new Home Energy Model and how this may be able to be used to develop an alternative approach to calculating the Simplified Method.

Question 90. Does Regulation 40B require revision?

a. Yes, (please provide justification)
b. No

HBF believes that Regulation 40B is sufficiently worded and adequately sets out the builder's, developer's and persons carrying out the work' obligations in providing sufficient information to the owner of a new build property so that any system put in place that address overheating can be operated correctly. We don't believe that any further guidance or recommendations are need in this regard.

Question 91. Do you consider there to be omissions or issues concerning the statutory guidance on providing information?

a. Yes, (please provide justification)
b. No

HBF does not believe that there are any omissions or issues concerning statutory guidance on providing information for the reasons set out in question 90 above.

Question 92. Are there any improvements that you recommend making to the information provided about overheating in the Home User Guide template?

a. Yes, (please provide justification)
b. No

HBF does not believe that any improvements are required to the existing guidance. We believe the information and guidance provided in the sample Home User Guide template provides excellent information to developers and home users on their options for limiting heat build-up in homes together with the control and mitigation of overheating when this does occur. The guidance provides advice and strategies for traditional and modern living that enables homeowners to choose the best approach for their property whilst retaining consideration towards home safety and security. The examples and advice given are relevant for existing homes as well as future homes captured under the Future Homes Standard. No further changes are deemed necessary.

Question 93. Are there any omissions or issues not covered above with the statutory guidance in Approved Document O that we should be aware of?

a. Yes
b. No

If you answered yes, please provide more details including suggestions on ways to improve the statutory guidance and point to existing evidence/examples that demonstrates why the gaps or issues you have identified should be reviewed as a priority.

HBF has nothing to provide in this response and have commented on all relevant areas in the responses to the questions above.

Question 94. 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. If possible, please provide evidence to support your comments.

As the representative body of the home building industry, we do not feel we can comprehensively respond to this point and feel this is more appropriately responded to by other sectors closer related to working within or alongside employment and the Equalities Act 2010.

Question 95. Please provide any feedback you have on the impact assessments

HBF has reviewed the impact assessments that have been provided alongside the Part L Future Homes Standard consultation in association with new homes. Thorough information has been provided in the impact assessments covering critical areas for thought and discussion. One of the main areas that directly affect home builders in terms of feasibility and viability along with securing critical supply chains are the transitional arrangements that accompany the introduction of a new building regulation. We were pleased to see that consideration had been given by government in allocating a choice of six months or twelve months respectively between the laying of the regulations in 2024 and them coming into effect in 2025. This is then furthered by an additional 12 month transitional arrangement for those properties registered and having commenced on site in line with the government definitions as stipulated in regulation 46A of the Building Regulations 2010.

It is recognised that the Government wishes to see the latest homes being built to the latest standards. Whilst the principle of this is widely agreed, the reality remains that home builders require stability and known costs in order to operate successfully. A significant change brought under this consultation that has been identified under section 5.16 of the impact assessment is the sunsetting arrangement to close previous transitional arrangements. This will have a dramatic impact on the home building industry and significantly impact the viability attributed to housing schemes and land bought and sold based on set construction specifications an agreed financial models known of at the time. Whilst this may not appear to be of any significance for Government, it can have dramatic impact on a businesses' ability to operate and function and can cause financial harm to those operating within strict financial conditions when building regulations are so frequently changed.

It is welcomed that the additional cost of this regulation is mentioned under section 8.13 of the impact assessment. Here government itself identifies the possibility of passing this additional cost onto homeowners. However, in reality this is not usually possible. The recent Competition and Markets Authority Housebuilding Market Study confirmed the view that new house prices are inherently influenced by comparable local second hand prices. Over time, we would hope to see valuers establish a more nuanced approach that takes into account the long-term financial benefits that come from residing in a new build home, but at present neither valuers nor mortgage lenders offer 'green premiums'.

It is also important to consider the recent history of regulatory and policy costs as well as the ongoing challenging environment for house building in both supply and demand. In 2022, HBF sought to estimate the cumulative impact of changes that had occurred in the previous year and those which were anticipated in the period up to 2025. *Building Homes in a Changing Business Environment* projected a likely additional cost of around £20,000 per plot when comparing 2020 and 2025, not accounting for general build cost inflation during this time too. The research used the best possible information that was available in 2022, but on reflection some of the input costs used to establish that overall estimate can be seen to have been low. The Building Safety Levy, for instance, is expected to be come at a punitive per home cost for developers, especially those building in southern England and those who deliver family-sized homes.

Government has, in recent years, determined that the residual land value model will moderate to absorb any number of often expensive additional development costs. Evidently, this model can allow for absorption of some additional costs up to the point at which it affects the volume of land that is brought to the market by

landowners. However, it should also be noted that another consequence is reduced contributions from developers in the form of Section 106. It is land values and Section 106 payments that *can* flex to allow development to successfully meet all of the additional costs that are imposed by Government. But this does not come without consequences. Private sector cross-subsidy in the form of S106 is responsible for providing half of England's Affordable Housing and generates billions of pounds per year for local investment in transport infrastructure, schools and healthcare services.

The performance gap of new build homes functioning in real life scenarios as compared to their as designed form is another area highlighted within the impact assessment under section 5.27. The performance gap is an issue that the home building industry has been aware of for many years. It is welcomed that this matter is also recognised by government. As new homes adapt and change towards the FHS, living patterns and lifestyle habits will also need to change and adapt alongside the new technologies that are introduced within the fabric of the new homes. UK housing has been carried out in its traditional form of gas central heating for so long that new habits will need to be formed in order to establish a most effective, efficient and economical way of living in a zero carbon ready home. A relevant part of the consultation paper is the desire to carry out post construction performance testing of new homes. This voluntary piece may involve the installation of a Smart Meter Enabled Thermal Efficiency Rating test. Whilst voluntary, it may begin to shed more detailed insight into habits and behaviours of homeowners as well as the fabric performance of new build properties. However, a degree of caution needs to be highlighted where any variation in building performance to that achieved in the design stage test is not necessarily a sign of workmanship of adequate construction around known critical thermal detail areas such as window and door reveals. The introduction of the BREL report alongside Part L in 2021 adequately ensures that good workmanship is identified, monitored, checked and recorded. Assurance is therefore needed that any post completion testing is not a potential route for recourse between new homeowners and builders where there is a link between the performance gap and higher utility bills.

Section 6 of the impact assessment looks at estimated costs and benefits associated with new build homes. Item 6.9 discusses the use of photovoltaic energy self-generated on new build houses. It is important for the Government to acknowledge that the provision of photovoltaic panels (PV) does not directly correlate to reduced bills. Generally, PV have not been a feature of new build properties in the UK up until recently. As this begins to change there are costs associated with their installation that have not necessarily been identified by in this consultation. Firstly, is the carbon footprint associated with their installation. China is currently the world leader in the production and manufacturing of PV. Whilst Whole Life Carbon does not form part of this consultation, it is acknowledged that it is due to come in by 2025/2026. With this being the case there is an enormous carbon footprint linked to their production and transportation across the world to the UK. Secondly, PV panels are located at the most inaccessible part of the house-the roof. PV panels generally have a 20 to 25 year life span but will require scaffold access, maintenance, cleaning and replacement within this time period which needs to be offset against any power generation that they provide to provide a real life cost to the consumer. Whilst the industry is supportive of their use, an understanding needs to be given that their use does not come at zero cost to the homeowner.

HBF recognises that the supply chain and establishing a mature heat pump industry in the UK is critical to ensuring the success of the future homes standard. It is welcomed that this has been identified under section 6.24 of the impact assessment. Training upskilling and experience is required in order for industry to have sufficient professional available for the manufacturing, delivery, installation, commissioning and aftercare needed with heat pump technology. The Government's current aspiration of installing 600,000 heat pumps by 2026 will not be met without improved commitment and intervention to facilitate this demand by industry. It is welcomed that this is mentioned under section 8.11 of the impact assessment.

As always, we hope that our comments are received in the spirit in which they are intended and reflect HBF's overarching desire to support key policy objectives whilst at the same time supporting our members in seeking deliverable and pragmatic solutions to proposed policy changes. Our submission to the consultation has been undertaken following meetings and workshop events with members, Government officials, energy assessors, trade associations and other stakeholders. It represents both the HBF's understanding of the proposed changes to Approved Document L FHS, Part F, responses to HEM and a consolidated response to the call for evidence to Part O and Part 6 of the Building Regulations 2010. Our response to the specific questions set out within the consultation itself seeks to give a comprehensive and reflective response to all the points raised.

As outlined within this document, the consensus of our members is to improve and deliver the standards associated with the FHS. However this can only be successfully supported when a final working model of the HEM is available to be able to meaningfully respond to the two fabric options proposed. The new home building industry is committed to help the Government deliver an 80% reduction in CO2 emissions by 2025 and beyond with zero carbon ready homes. There is significant investment required to secure an established supply chain together with infrastructure investment and skills training. The consensus is that the legislation should be implemented in 2025 following a 12-month transitional arrangement between the laying of legislation in 2024 and a further 12 month or 24 month on site transitional arrangement from 2025 or 2026 in line with governments definition of registration and a meaningful plot start. We believe that with this combined approach, the home building industry can help the Government deliver its ambition of building zero carbon ready homes and net zero by 2050.