The Chartered Institute of Building (CIOB)

submission to

Department for Levelling Up, Housing & Communities

on the consultation

The Future Homes and Building Standards: 2023 consultation

25 March 2024

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Introduction

The Chartered Institute of Building (CIOB) is the world's largest and most influential professional body for construction management and leadership. We have a Royal Charter to promote the science and practice of building and construction for the benefit of society, and we have been doing that since 1834. Our members work worldwide in the development, conservation and improvement of the built environment. We accredit university degrees, educational courses and training. Our professional and vocational qualifications are a mark of the highest levels of competence and professionalism, providing assurance to clients and other professionals procuring built assets.

Background & Key Points

In recent years there have been a number of important consultations covering the sustainability of homes. CIOB has taken every opportunity to respond to these, highlighting the important role that decarbonising the construction sector can play in reaching the UK's legally binding net zero targets as well as communicating how new technologies can help reduce carbon output and drive down bills for consumers. Furthermore, we have raised the need for the Government to look at the need for a national retrofit strategy to ensure that home improvements are targeted at the areas that are most appropriate on a home-by-home basis and not in a one-size-fits-all approach.

While we support the intentions behind a future standard to ensure that all new buildings, domestic or non-domestic, are held to the highest standards of sustainability we do believe that this consultation misses out on some of the key areas we feel would help to monitor and then reduce the carbon output of buildings. For example, we understand that the Government has indicated that embodied carbon emissions will be subject to a future consultation. However, embodied carbon emissions are one of the key areas of concern, with many companies not monitoring or reporting on these at all. The built environment sector has already established a draft regulation for embodied carbon and further detail on this are included within our submission. Alongside this, while a dedicated consultation on embodied carbon is welcome the industry needs an understanding of how it will relate to any potential future homes standard which we feel would be better understood if it were contained within this consultation.

We also understand the need for government to provide indications of systems that they feel would help reduce bills and emissions at the same time, such as heat pumps. However, we are concerned with some of the language within the consultation as it appears to suggest that heat pumps are the only possible alternative to traditional heating systems. While there are merits to heat pumps, they may not be the most applicable system for all homes. Specific geographical variations as well as limited access to electricity grids may mean the consumers are better suited with alternative systems and we would be keen to see this reflected within the advice and guidance produced by government.

Full response

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

Professional body or institution

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]

N/A

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?

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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]

South East

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

Submission on behalf of an organisation.

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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)~~

Of the options presented, option 1 will achieve more energy efficient outcomes than option 2. It will result in lower energy use, lower peak demand and, importantly lower bills for householders. We believe that the incorporation of solar PV technology is essential for ensuring a balance between on-site renewables and dependence on greening the grid. This is because option 2 risks placing the burden on off-site PV.

The consultation document states that 'Capital cost estimates have been developed with support from expert industry consultants'. Given the importance the consultation places on these costs in assessing policy options, we would like to see more detail on this. How robust are these estimates? How were they arrived at? Are they spatially sensitive, or is this a national average? The heterogeneity of housing markets in England makes working with an average problematic, so we would urge the Government to develop regionally sensitive capital costs estimates.

Whilst we understand that the current options favoured are Option 1 and Option 2, we would like to see an analysis from Government on why the remaining options were not viable or presented through this consultation. Options 3, 4 and 5 present some interesting opportunities for increasing the use of Passivhaus technologies which, while not applicable to many developments, could significantly reduce carbon emissions.

The document also states, 'Although this option [1] is cost-effective at reducing carbon overall, it comes with additional upfront costs for developers and may therefore affect overall housing supply'. Again, we would like to see robust and transparent data around the specific impact on housing supply, ideally broken down by region given the variation of housing markets in England.

However, we hold concerns that these additional construction costs will likely push up prices of new homes even further.

There are further potential unintended consequences for homebuilders such as potential problems over the electricity grid, particularly since the scaling back of some of the UK's net zero ambitions in 2023 from the Prime Minister for heat pumps and electric cars which was expected to lead to a 50% increase in electric demand by 2035 and 100% by 2050.

This has been seen in three west London boroughs (Hillingdon, Ealing and Hounslow) in 2022 where the Greater London Authority (GLA) wrote to developers warning them that it might take more than a decade to bulk up grid capacity and get developments under way.

The three boroughs accounted for almost 5,000 homes in 2019-20, equivalent to 11% of London's housing supply. Further stalling in areas that have grid capacity issues further damages the risk of vital new housing being built. As noted by Liquid Gas UK in their response to this consultation, electrification of heating systems, while positive, may not always be feasible. Liquid Gas UK note that "different solutions will be required for different types of building stock and locations across the country". In terms of the locational variables, some rural-off grid properties may only be able to access under-developed local grids which may not be able to accommodate a significant increase in reliance on electrical capacity.

Furthermore, these capital costs are based on 3 bed semi-detached houses. While this remains a popular housing typology, the latest data for new builds shows that apartments, and detached houses are being delivered at the same quarterly rate as semi-detached houses. Together with bungalows, and terraced housing, apartments and detached houses account for over 70% of new dwellings. This raises the question of what the capital cost estimates are for these other types of dwelling.

Bearing in mind the point made above about the need for robust and transparent data around the interaction between capital costs, housing supply and option 1, the potential for capital cost to vary by housing type and by area suggests that option 1 may be viable for some housing types and in some areas but not others. This suggests the need for a comprehensive economic impact analysis of policy options rather than deferring to industry estimates.

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

~~☐ low capital cost~~
x lower bills
x carbon savings
x 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.

If ensuring new homes are 'net zero ready' is a key aim, then carbon savings must be a priority. However, given the recent energy crisis and costs of energy bills, lowering bills must also be a priority for the Future Homes Standard (FHS).

We know from our December 2023 research, entitled 'New Build Housing: How regulation can improve the customer journey' report, that energy efficiency is one of the key features that members of the public would look for in new build homes. 37% of respondents (731) of the 2,000 18+ adults in the UK interviewed all stated that this would be one of the main features they would look out for, alongside a 'good price' (41%) and 'good location' (41%).[1]

At a time where the average annual gas and electricity bill cost for a medium usage household in a 3-bedroom house / 2-3 people is £2,008.69, energy efficiency of new builds will become an even more attractive proposal for many, particularly young families. However, as mentioned in our response to question 7, we hold concerns that the higher capital cost, which will be required by developers, will be pushed onto potential buyers, which could negate any savings made by a more efficient housing stock.

We also feel that the new specification should emphasise the importance of improving the ventilation and air quality within new homes. We understand that revisions to Part O are included within the Future Homes Standard, but we would like to see assurances that this takes into account homes that are not connected to heat networks. The

[1] Chartered Institute of Building (CIOB), New-build housing – how regulation can improve the consumer journey, December 2023

importance of good air quality within buildings cannot be overstated. Whilst it examines the effect of varying quality issues, the Building Research Establishment's (BRE) reports into the impact of poor-quality homes on the NHS indicate that investments to improve some of the worst quality homes could save the NHS around £1.4bn in first year treatment costs alone.

Building regulations over the last decade have improved quality, with many new structures achieving nearly zero-emission buildings (NZEB), and airtight building envelopes. However, with some of these improvements, particularly airtightness, the importance of ventilation is often overlooked.

Poor ventilation can have serious consequences for buildings and for people: It can lead to condensation and mould damaging walls and fabric, and poor health for occupants. High humidity levels can affect allergies and complicate respiratory diseases brought on by certain biological agents such as mites and mildew. In many dwellings and buildings that are compliant in terms of insulation and airtightness, the required air flow rates through passive venting are sometimes not met. Therefore, while we welcome the introduction of self-regulating devices, (Demand Control Ventilation, and Heat Recovery Ventilation, for example) specifications must allow that it is still possible to ventilate a dwelling by natural means such as open vents in walls, and windows, thus ensuring the ability to adequately ventilate regardless of the status of any mechanical ventilation system in a building. Otherwise, in buildings that use mechanical ventilation, when the system is switched off, the air will be of poor quality, and occupants will suffer associated health problems. This is of particular concern in local authority housing, where residents do not always have control of heating and air conditioning. Whatever the outcome of this consultation, we must ensure that buildings continue to meet standards when it comes to achieving desired flow rates.

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.

Option 1 as per our response to Question 7.

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~~

Option 1 as the impact assessment indicates that the overall benefit for society is higher than Option 2.

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

☐ low capital cost
x lower bills
x 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.

If ensuring new buildings are 'net zero ready' is a key aim of both the Future Homes Standard (FHS) and Future Buildings Standard (FBS) then carbon savings must be a priority. The reduction of energy expenditure on non-domestic buildings should be a co-benefit.

CIOB is in alignment with the Royal Institute of British Architects (RIBA) who are calling for operational energy targets to be aligned with the criteria set out in the UK Net Zero Buildings Standard. This will help ensure consistency across the built environment as these metrics are already used in measuring existing standards such as Passivhaus. As the Standard evolves additional metrics such as cooling demand should be considered.

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)

The delivered energy metric can be measured post occupancy, ensuring a feedback loop to design predictions. It should also include an estimate for unregulated energy. Primary energy is a confusing metric which cannot easily be measured by occupants and residents. A Fabric Energy Efficiency Metric should be used, but it should ideally be an absolute metric based on space heating demand. Lastly, total energy use from all sources including on-site renewables makes it easier to track and compare performance year-on-year.

We would like to note in our response that we are disappointed that the measurement of embodied carbon is not being considered as part of this consultation. CIOB has been consistently campaigning for greater measurement and limiting of embodied carbon.

Buildings and construction form a substantial portion of UK carbon emissions, contributing both operational carbon emissions (due to energy and water use) and embodied carbon emissions (due to the use of construction materials). The sum of these operational carbon has reduced in recent years due to the decarbonation of the grid, a trend set to continue with further decarbonisation alongside transitioning to electric heating.

As such, the embodied carbon emissions in construction contribute an increasing proportion of the whole life carbon emissions for most buildings, with one study indicating that over two-thirds of a low energy new building's emissions are embodied.[2] Operational carbon emissions are directly linked to operational energy use, which are limited by Part L of the Building Regulations. There is no such parallel legislation limiting embodied carbon emissions.

Across the construction industry, firms are already calculating and reporting the whole life carbon emissions of their projects. However, this is typically done either voluntarily, or in response to client requirements. To address this, several industry figures have created a proof of concept for the creation of a Part Z and Approved Document Z amendment to the Building Regulations. This would outline requirements on the assessment of whole life carbon emissions and limiting of embodied carbon emissions, for all major building projects. CIOB is a listed supporter alongside over 140 other organisations.

Part Z is written with proposed dates that are deemed to be achievable whilst remaining ambitious, requiring the whole life carbon assessment and reporting of all projects of more than 1000m2 (or 10 dwellings) from 2024 for non-domestic buildings, and 2026 for domestic; and the introduction of legal carbon limits on embodied carbon emissions from 2028, giving a period of time during which robust limits can be set. This proposed timescale follows the precedent set by other European countries such as the Netherlands and France that have already started progressing this topic.[3]

We understand that a separate consultation is going to be hosted on the impact of embodied carbon emissions, however, no timescale has been proposed for this. The industry needs certainty on any future regulation of embodied carbon to ensure compliance with currently voluntary measurements.

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)~~

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)~~

[2] Gaspar, P.L. and Santos, A.L., Embodied energy on refurbishment vs. demolition: A southern Europe case study, Energy and Buildings, 2015
[3] Part Z

Yes, although a separate issue, additional guidance should be provided for homeowners of new build properties with heat pumps. This should go beyond the broad benefits and operational instructions to cover areas like repair and maintenance to ensure maximum efficiencies over the life cycle of the product. This point is expanded upon in our answer to question 15.

Whilst we understand the environmental benefits of installing heat pumps as an alternative to traditional heating sources, we would like to see acknowledgement given that there also may be downsides to installing heat pumps, especially in the short term. Specifically, that, at this moment, heat pumps are expensive to operate and run and may not have many short-term energy cost impacts that are expected in the long run. Alongside this, the geographical split of the construction sector may mean that the appropriate, accredited and trained professionals are not as readily available in certain areas of the country to properly oversee the installation and maintenance of heat pumps. We expect these issues to ease over time but would like to see it noted in guidance given to consumers.

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)~~

With complex systems such as heat pumps, regular maintenance and upkeep is important to ensure maximum efficiency. The Renewable Energy Hub UK has provided useful information on heat pump maintenance which demonstrates that, if not properly maintained, ground source heat pumps can lose up to 25% of their efficiency.[4] They also require yearly maintenance and checks by qualified professionals. Air source heat pumps require slightly less maintenance. There is no single prescribed timeline for maintaining air source heat pumps, instead manufacturers will provide information specific to their product on how often to maintain it.

When it comes to heating systems and electrical appliances, consumers can be overwhelmed with information and booklets. Therefore, we feel it would be useful to fix this information to the heat pump to ensure that it is not lost or misplaced.

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)~~

[4] The Renewable Energy Hub UK, Heat Pump Maintenance, 23 September 2023

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)~~

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)~~

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)~~

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)~~

Yes, we are supportive of the proposals to increase requirements on homes created by material change of use and have regularly highlighted issues with poor standards of housing created through permitted development rights (PDR).

Indeed, Ministry of Housing, Communities & Local Government (MHCLG) funded research into the quality standard of homes delivered through change of use permitted development rights finds that '*...permitted development conversions do seem to be more likely to create worse quality residential environments than planning permission conversions in relation to a number of factors vital to the health, wellbeing and quality of life of future occupiers. These aspects are primarily related to the internal configuration and immediate neighbouring uses of schemes...*'.[5]

Setting whole-building standards for dwellings created through PDR should be taken as an opportunity to address some of the quality issues that have plagued PDR since its inception. Bringing dwellings created under a material change of use, up to the same

[5] Clifford,B, Canelas, P. Ferm, J. Livingstone, N. Lord, A. Dunning, R., Research into the quality standard of homes delivered through change of use permitted development rights, July 2020

energy standards as new-builds is a sensible and much needed proposal to heighten the quality, appeal and efficiency of these properties.

As with responses to previous questions we would like to see assurances given that any whole-building standard which is implemented takes into account Part O and considers the potential increased likelihood that buildings converted through material change of use will suffer from overheating.

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)~~

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

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

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

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

The options identified above provide a good starting point for defining the categorisation of buildings. However, there are other factors that could be considered including the type and tenure of the homes. It would also be a good opportunity to acknowledge the difficulties associated with the location of certain homes. More rural off-grid properties will require drastically different solutions to increase their energy efficiency, and this must be acknowledged to avoid a one-size-fits all approach being adopted by government.

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)

We do not believe using primary energy as the principal performance metric in the Building Regulations is the appropriate approach.

Primary energy is a complex metric with factors that rely on conversion factors that change over time, making it difficult to track progress and compare performance against other dwellings.

It will also become less relevant as the electricity grid decarbonises. It also favours gas over electricity, going against heat decarbonisation objectives.

Finally, primary energy is also a confusing metric which cannot be measured or understood by residents and occupants. This limits opportunities to engage them in understanding and managing energy use which is crucial in improving performance.

Instead, we must start regulating the amount of energy used by a building. We suggest that operational energy becomes the key metric. The metric is already well known and understood within the sector as well as by building owners and occupiers.

Using operational energy as the key metric would also allow for benchmarking and minimum standards to be easily established based on building type, driving further innovation within the built environment.

Having a fabric energy efficiency metric could result in positive outcomes, but it should be an absolute metric based on space heating demand.

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)

We broadly agree with the circumstances set out in the consultation document. There will be certain circumstances, such as for the conservation of heritage assets or for safety reasons where MCU buildings cannot meet the standards set out in the consultation. However, relaxation of the standards should only be applied in very specific circumstances and must be assessed on a case-by-case basis.

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

Please select all that apply:
x there should be guidance on circumstances where relaxation of the notional standard may be appropriate
x there should be monitoring of how relaxation is applied
x only formal relaxation or dispensation through the local authority should be possible
x other (please provide further details)

As mentioned above, we feel that it is important that relaxations are judged on a case-by-case basis so urge this to become part of the criteria for relaxation. Alongside this, we would like to see assurances given that the criteria for relaxation is consistently reviewed to understand whether it remains relevant.

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)~~

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)~~

The proposals for a Home Users Guide which provides advice on ventilation, heating and domestic hot water, on-site electricity generation and overheating are positive, and we feel that utilising this tool as a method to inform consumers on ways to continuously improve the efficiency of their home will be a useful way of ensuring that systems are maintained correctly over time. Therefore, extending their use as wide as possible, depending on applicability, would be beneficial to the built environment as a whole.

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)~~

Air leakage, occurring through gaps or cracks in buildings can allow for a significant amount of heat to escape, leading to higher bills and an overall loss of energy efficiency. Construction consultancy RJ Energy posit that air leakage can "also damage the buildings structure and insulation as warm moist air will condensate when reaching colder areas within a wall, floor or roof construction."[6]

It seems sensible that something that could cause a significant loss of heat is measured and monitored where possible, especially when a building is going through a change of use.

New, innovate systems are consistently being developed to monitor and detect air leakage. For instance, researchers at the U.S. Department of Energy's Oak Ridge

[6] RJ Energy, Air Tightness Testing

National Laboratory have developed a new way to detect air leakage by using cameras. This system works through many construction materials including brick, vinyl siding and concrete masonry blocks and provide a real-time leak visualization.[7]

Whilst we are not suggesting that this technology is the most applicable way to measure air leakage in every instance, it is an example of the progress being made towards developing systems to ensure that buildings are operating to their peak efficiency. Technologies like this should be examined by government when making the case for measuring air leakage in 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)~~

As homes age they will naturally become less energy efficient. Systems within the home will also deteriorate and simultaneously become less efficient.

Therefore, introducing a system to performance test homes post-occupation seems sensible and will lead to greater data collection on the performance of systems and lifespan of materials. However, it must be carefully considered how post occupancy performance testing will be monitored and resourced. Those carrying out the checks must be properly accredited and have undertaken the necessary training to ensure that evaluation is accurate and useful. Alongside this, careful consideration must be given to what aspects of the home are monitored or evaluated to provide the most accurate picture.

It is important to reduce the performance gap and close the feedback loop between how much energy future homes use versus the design prediction. Post occupancy performance testing can have a key role to play here, and it should be properly tested and considered whether the system should be mandatory or voluntary.

One voluntary mechanism currently in operation is the Built Environment Carbon Database (BECD) which is endorsed by several trade and professional bodies, including CIOB. The database is envisioned to become the main source of carbon estimating and benchmarking for the UK construction sector and a practical instrument to support the decarbonisation of the built environment. The database has been developed to collect and supply product data and entity level data to the industry through its own portal and by interacting with existing databases and software solutions. Further information on the BECD can be found here: www.becd.co.uk.

In the first instance we would suggest that the system is initially operated on a voluntary basis while it beds in and the skills needed to operate it successfully are developed. However, in time, we would be keen to see it become mandatory and encourage government to produce a timeline for transition.

[7] Building Design + Construction, Researchers create building air leakage detection system using a camera in real time, 1 November 2023

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)~~

The introduction of a Future Homes Standard brand could be beneficial for consumers when purchasing a new home. In a recent CIOB research report into the quality of new-build housing, we conducted a survey of 2,000 UK adults which found that around 45% of people had little to no trust that housing developers would deliver to a high standard.[8] Initiatives, backed by government, to drive up standards and provide a mark of quality assurance could go a long way to addressing this problem. This could provide benefits, not only to consumers in assuring them that the product they are receiving is energy efficient but could also help dissuade some of the more negative perceptions that have been generated over-time about the quality of new-build housing.

However, this system would not be without risks. The criteria for branding must be regularly reviewed and updated as the industry evolves and develops new technology which may be more suitable. It must also take into account some of the same criteria listed in Question 28. Depending on the type of home, location, height of the building and the materials used in construction, a building will only be able to achieve a certain level of energy efficiency. Therefore, this needs to be considered as part of the grading process.

Finally, there is risk of adding to further layers of complexity and confusion around evaluation and certification schemes. For example, we already have EPC ratings which is a basic measure of energy efficiency which is needed before selling or renting out a home and must be approved by a domestic energy assessor. Additionally, there could be duplication with the functions of Building Control and/or potential post occupancy evaluations.

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)~~

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?

[8] CIOB, New-build housing – how regulation can improve the consumer journey, December 2023

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

The Regulation, as currently written, does not contained detailed proposals for how existing homes will be covered by this requirement. Further detail is needed as there could be unintended consequences in extending ventilation to 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)~~

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~~
From CIOB's perspective we cannot see any gaps in guidance around commissioning heat pumps. However, we believe it would be worth speaking with technical experts from relevant trade and professional bodies that likely have clear guidance on the commissioning and service of heat pumps, such as the Chartered Institution of Building Service Engineers (CIBSE) and the Chartered Institute of Plumbing & Heating Engineering (CIPHE) who are better placed to advise.

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)~~

The information proposed to be added to the Home User Guide will be useful in explaining how homeowners can use their heat pumps efficiently. However, we would be keen to understand what provisions are being made within the Home User Guide to recommend alternative heating systems as heat pumps may not always be the most efficient way to heat a home.

As we have mentioned elsewhere in our response, heat pumps may not be the most appropriate heating systems for all new homes. Therefore, we would be keen for guidance to reflect this and propose possible alternatives such as renewable liquid gases.

Liquid Gas UK has produced research to suggest that Liquefied Petroleum Gas (LPG) is the lowest carbon energy source available to off-grid properties and non-domestic

buildings. It is worth considering this as a viable alternative should heat pumps not be the most appropriate source of heat for some buildings.

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~~

We support the principle of making the Home Users Guides available digitally. However, we also think it would be beneficial to ensure that developers provide both a digital and physical copy to consumers.

We would also like to see consideration given to providing the Home Users Guide in as many accessible formats as possible including to those with visual impairments. We recommend following the basic principles outlined on the Future Homes Hub here.

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)~~

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)

The sleeving methodology is not sufficiently robust. There is a bias towards ongoing use of heat networks, even where most of their heat is being generated from fossil fuels, and the decarbonisation pathway for buildings already connected to the network is not clear.

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)

As per our response to 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)~~

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?

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

a. Yes
~~b. No~~

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?

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

The new proposals for the Future Homes Standard are not significantly more challenging than the changes made to Part L in 2021 and we encourage the Department of Levelling Up, Housing & Communities (DLHUC) to share evidence as to why a relaxation would be justified.

Building regulations should be the minimum standard nationwide, without exception. There is the risk that exceptions could be differently interpreted leading to regional inequalities.

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)~~

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)~~

The FHS and FBS do not go far enough to render regulations 25A and 25B redundant. The consultation statement that these standards will make new homes and non-domestic buildings 'zero-carbon ready' implies no further work will be necessary to ensure they result in zero carbon emissions, but this relies heavily on the decarbonisation of grid electricity.

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)~~

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.

Although we agree with the feasibility of Option 1, we do wish to highlight concerns about competence and shortage of skills.

For example, we know there will need to be uptake of trained heat installers. Statistics indicate that a vastly increased number of trained heat pump installed would be needed, as according to the MCS Installations Database (MID) there are only 1,687 MSC Certified Contractors installing circa 36,800 air source heat pumps a year in 2023 (or approximately 3,066 a month).[9] Upskilling the existing workforce or training new engineers takes time.

This is just one example in an industry that is dealing with significant capacity issues. We have recommended earlier in this response that a stock check is needed to understand the capacity within the industry to carry out voluntary or mandatory evaluations of the efficiency of new homes. Similarly, it would be beneficial to do the same for those qualified or certified to instal heat pumps. We are aware, as noted above, that there is a shortage of installers under the MCS certification, however, this does not provide a full picture as there are other certifications available. Therefore, to get this full picture we recommend that work is done to understand how many available fully certified installers exist in the UK as well as their geographical split to ensure that there is coverage in areas of the UK where construction work is less concentrated.

We recommend Option 1 as the route forward but would suggest a review period takes place (potentially within the first 3 months) to listen to industry about its ability to upskill the workforce and prepare for the new standards. Of course, the challenge is ensuring

[9] MCS, MCS Data Dashboard – Air Source Heat Pumps Data

the Approved Documents, new notional building specifications and National Calculation Methods (NCMs), including the new HEM, will also run to this timeline.

The reason we urge caution is we have seen numerous challenges with capacity under the Government's building safety programme.

By 6 April 2024, Approved Inspectors will need to be Registered Building Control Approvers (RBCAs) to continue to operate and issue new building control initial notices.

In a letter sent to the Building Safety Regulator (BSR), the Department for Levelling Up, Housing and Communities (DLUHC) and the Welsh Government, the Chief Executive of Local Authority Building Control (LABC) stated that local authorities may be unable to carry out their building control responsibilities after 6 April 2024 due to a lack of registered professionals. The potential collapse of the building control function in local authorities would have a wide-ranging effect on the construction industry, consumers, regulatory enforcement, and compliance.

Similar transitional arrangements to those proposed in this consultation were put in place for the new registration function but the industry is struggling to deliver in line with the changes.

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)~~