

## Future Homes Standard Consultation Response

The Property Care Association (PCA) is the UK's leading representative organisation for the protection of buildings. Championing high standards of professionalism, providing guidance, expertise, and advice for homeowners and professionals.

Our skilled and audited membership operates across domestic, commercial and civil sectors in the structural repair, structural waterproofing, timber preservation, damp protection, flood remediation, residential dwelling ventilation and invasive weed control industries.

With strict membership criteria, comprehensive training programmes and a wealth of information for professionals and homeowners, the PCA and its members help protect the integrity and comfort of all building types including new build and refurbishment projects whilst also being a reliable source of guidance and expertise.

### Executive Summary

In principle, we agree with much of the proposed changes to the Approved Documents set out within this consultation; the exceptions are detailed in our response. Our recommendations from this consultation are:

- **Wider Scope**

This consultation has a very narrow scope: it refers to circa 200,000 buildings each year, excluding the 26 million existing homes in the UK. Although there are some proposals in this consultation which will lead to changes within existing dwellings (particularly Regulation 42), the outline of the consultation does not make this clear, which may result in unintended consequences as these changes will not be properly consulted on.

These proposals should also consider where new buildings should be built and how buildings should be built with climate change in mind: as our weather changes, and if not pre-planned, this could impact the effective working of ventilation systems.

- **Training**

Upskilling existing installers and Building Control Surveyors is essential to ensure they have a good understanding of the design, products and installation of ventilation systems. We have developed the Certificated Surveyor in Dwelling Ventilation (CSDV) to support the sector and propose that this becomes compulsory training for designers of ventilation systems, in the same way that Certificated Surveyor in Remedial Treatment (CSRT), Certificated Surveyor in Structural Waterproofing (CSSW) and Certificated Surveyor in Timber and Dampness in Buildings (CSDTB/CSDB) are for damp and mould specialists

- **Ensure Building Regulations are Enforced**

Due to the impact which inadequate moisture control can have on residents' health, it is essential that ventilation systems are designed and installed correctly. Mandatory post-occupancy testing and sign off in line with the Building Safety Regulator, either via Building Control or an extended Competent Persons' Scheme, will ensure residents are protected as far as possible.

- **Educate Occupants**

Ensure they have clear, understandable documents, such as a Home User Guide and logbook, which give them knowledge to maintain and use their building services effectively.

**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?**

We disagree with the reduction to a maximum Specific Fan Power of 0.2. for decentralised mechanical extract ventilation (dMEV) type fans. In our opinion this is too low and may mean limited units available on the market which will meet this requirement. At present there are few fans available that provide this level of energy performance. Another consideration is that this may impact on the audible level of the fan which may impact their use by any occupant.

We think a more reasonable figure is 0.35, the difference in running cost to the consumer would be negligible. This would allow for a gradual transition, allowing less efficient fans to be phased out without distributors being left with unsellable stock.

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

We appreciate the difficulties achieving standards when creating dwellings by Material Change of Use (MCU). A whole dwelling approach would allow for a greater degree of flexibility depending on the constraints of the structure. However, this approach must be taken with a degree of caution. Building elements with varying degrees of performance may result in problems: colder surfaces may be prone to condensation and mould, especially if the concerns regarding the volume of non-compliant ventilation installations are not addressed.

**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?**

The MCU standard should be universal for any habitable accommodation: whether houses of multiple occupancy, care homes or student accommodation. We accept that listed buildings and those in conservation areas may have special consideration, but in these circumstances the impact to the health of the occupant and the environment should still be the primary concern.

**Question 27 & 28. Should different categories of MCU buildings be subject to different requirements? Which factors should be taken into account when defining building categories?**

A 'one size fits all approach' will undoubtedly provide additional complications: therefore some degree of differential depending on building types would be advantageous. Different requirements for high, medium and low-rise buildings would be preferred to account for the dwelling density in a small footprint and the limited viable options which may be available to high rise. However, the consultation is vague on where else the different requirements might apply.

We would have concerns that using age as a parameter might mean many properties, including those where thermal performance is poorest and therefore requires a greater degree of improvement, may be given dispensation.

Equally even if a conversion was undertaken to part of a dwelling this should not allow for a reduction in standards. Although we accept there may be challenges when addressing the performance of the building envelope, where there are new additions, these should be undertaken to the new standards.

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

The health, safety and wellbeing of occupants should be the highest priority at all times.

As a result, Building Control bodies should not be able to relax MCU standards. The consultation indicates that there should be consideration for 'traditional dwellings', a term which is broad and undefined. We suspect many would interpret this as structures built with a solid masonry wall, which in many instances are the properties where the most improvements are required. The regulations should be written so as not to provide the opportunity for loopholes to be introduced for certain property types.

We accept that there may be exceptions for some dwellings that are of special historical value and in these circumstances there may be a need for a sympathetic approach. This should not be the case when the building is being made into short-term or permanent dwelling(s) or any habitable space e.g. student accommodation, care homes.

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

In circumstances where an element cannot technically, functionally or economically achieve the minimum standards in the Approved Documents and the alternative means of compliance used, then the limiting standards should be retained.

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

The limiting standard should safeguard against the risk of moisture, damp and mould, high energy demand and energy bills and other factors affecting indoor air quality.

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

We appreciate that there will be an increased cost for the construction of homes to this higher standard however, better thermal efficiency in homes will likely have health and financial benefits for occupants. Due to an increased cost of living, occupants are often afraid to use buildings services such as heating and ventilation resulting in damp, mould and poor indoor air quality. The cost impact of these has been [well documented by BRE](#). Reduced building running costs will likely lead to increased use of these services, which will positively impact the health and wellbeing of occupants.

**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?**

We agree with the proposal but believe the Home User Guide should be extended to all properties not just those that have undergone an MCU. It is essential that householders understand how to use and maintain their property. This includes both the structure of the building, such as regularly cleaning gutters to avoid overflow and leaks developing, and internal measures, such as heating, fans and ventilation. Understanding how to best maintain the property from the outset will result in fewer problems due to a lack of awareness.

We feel this proposal could be extended further to include a property logbook that includes a record of all remedial works that have been undertaken, servicing history and records of any guarantees. This model has a long history of success in monitoring the servicing of cars. This would ensure that all vital services are maintained, which contributes to their long-term success, whilst protecting the occupants as consumers.

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

We agree that all homes that have undergone an MCU should be airtightness tested. Assumptions will otherwise be made which may impact the occupants' health as it may result in inadequate ventilation measures.

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

We fully support the proposal for post-occupancy performance testing and would suggest that this is compulsory, rather than voluntary. Compulsory post-occupancy performance would allow the tester to ensure the occupant understood the contents of their Home User Guide and were maintaining their home based on the recommendations within. Post occupancy testing should not be limited to the thermal performance of the building. It would also provide an opportunity to address potential defects relating to the performance of the new home. Here, government would have the opportunity to centralise results from post-occupancy performance data; to analyse trends and identify where improvements in residents' understanding or building performance could be improved. This would increase enforcement and accountability, reduce the number of non-compliant installations and provide healthy homes and buildings for all.

As we strive for increasingly airtight homes, it places greater emphasis on the need for a ventilation system to maintain a healthy indoor environment. Our members' experience is that ventilation is often not initially installed in line with the minimum standards set out in the Approved Documents and the required flow rates are rarely obtained. Introducing compulsory post-occupancy testing should provide a mechanism to check that the Approved Documents have been complied with, thereby reducing the likelihood that damp and mould will develop.

As the Building Safety Regulator becomes established, we propose that ventilation also becomes a part of its remit due to the severe health impacts which inadequate ventilation can cause.

In dwellings where the ventilation is performing poorly the first sign is often mould growth. However, in dwellings that have a high performing thermal envelope, mould is less likely to develop and there may be no other indicators of poor indoor air quality. Environmental assessment using technology such as that developed by Maple R&D <https://www.maple-diagnostics.com/> could be used to determine post occupancy moisture loadings of the property, identify those at risk of imbalance and redress this at an early stage, before this leads to more severe health and building problems.

**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.**

It does not appear from the proposal in this consultation that the logo would do anything other than demonstrate that the home had been built to and met the standards of the Approved Documents.

All residents deserve the right to live in a home that has been built to the Approved Documents. There should be a clear mechanism to ensure Approved Documents are properly enforced, which the proposed post-occupancy performance testing would address.

Consumers should be able to expect this of all properties built and consumers believe that this is already the case.

We believe that standards should be raised across the sector and would propose that better regulation was introduced for all, rather than the few who have the resource to sign up to support the scheme.

**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?**

In principle, we agree to the majority of the proposed changes to Approved Document F (ADF). It is however our understanding that the abundance of poor-quality ventilation designs and installations is due to a lack of enforcement. We hope that the Building Safety Regulator (BSR) will include ventilation within its remit, due to the significant health impacts which poor installation can have, as detailed in the government's response to the [coroner's report](#) into the tragic death of two-year-old Awaab Ishak in 2020.

However we have some concerns regarding the technical changes proposed as well as some of the changes introduced in the last revision to ADF.

### Ducting

Many failed ventilation systems are the result of the excessive and poor use of flexible ducting and we agree with the suggestion to restrict its use. Given that we know that ducting is the primary cause of ventilation system failures, we would like to see illustrative guidance for installers, as was previously provided in the domestic ventilation compliance guide.

We question the proposal to keep ducting runs for decentralised mechanical extract ventilation (dmev) to below two metres. Whilst we agree that keeping the distance as short as possible is preferable, it is not always possible. There are obvious benefits to using a decentralised systems in existing buildings and this change may also encourage discharge grills to be placed onto less favourable facades, such as those facing into prevailing winds. Where an appropriately designed and installed system, including suitable ducting, is employed and performance tested, we believe the two-metre maximum ducting proposal is unlikely to affect the performance of the system.

We agree with the two-metre restriction to intermittent extractor fans.

### Over Ventilating

In the previous edition of ADF, guidance was given on the Whole Dwelling Ventilation Rate for mechanical ventilation which considered assumed or actual occupancy levels in homes. The current ADF replaces the previous guidance with guidance based on the number of bedrooms, regardless of how many occupants there are or will be in a home. However, it is occupants who produce pollutants

that need to be controlled, not bedrooms. Many properties will have much fewer occupants but equally many will be over populated, with [9% of social rented homes being overcrowded](#).

Based on the current regulations and depending on floor area, the same Whole Dwelling Ventilation Rate may be assessed in a four-bedroom property occupied by two people as in the same home occupied by eight people. The current ADF suggests that we now typically need nearly 50% more air to be supplied to a home to provide the level of Whole Dwelling Ventilation required. Providing ventilation systems with these increased airflows are likely to offset a large proportion, if not all of the energy savings that increased insulation and airtightness measures are intended to bring.

Existing homes, (not subject to any building fabric improvement measures), would potentially lead to an increase in carbon emissions and running costs for occupants, when ADF is followed and only the ventilation is upgraded. To put this into perspective, if we assume a similar occupancy level in the previous and current ADF for a three-bedroom house and are considering a continuous running mechanical extract ventilation system, the current ADF may require the home heating system to heat an additional 864,000 litres of air per day from outside to inside air temperature compared to that required under the previous ADF.

It is already well documented that many occupants do not use ventilation systems as they should, or allow them to operate as intended, because of perceptions of high running costs. There is a strong possibility that the last revision to ADF will have led to an increase in this practice. Conversely, ventilation systems allowed to work at much higher flow rates may end up off-setting most, if not all, of the energy savings building fabric improvements hoped to bring. The approach to existing buildings needs to be more dynamic than the current ADF allows.

As a result, testing needs to be done with real-world situations in mind, rather than based on the ideal scenario.

Whilst in recent years the ADF has provided greater recognition of the differences between existing and new builds, we feel there is still scope for development. In existing buildings, we would like to see an approach to ventilation that can be tailored to the requirements of those that occupy that building.

### Addressing the issue

Designers and installers must understand the term “Whole Dwelling Ventilation” and design a system which considers the property and its residents as a whole. Getting this general, continuous ventilation right has been proven to make a major contribution to good overall ventilation in a dwelling, while getting it wrong often leads to condensation, mould and a build-up of undesirable indoor air pollutants.

The Whole Dwelling Ventilation Rate also has a large impact on the energy consumption of a home and the running costs for its occupants. Unnecessarily high ventilation rates lead to high carbon emissions to the environment and energy bills for the occupants. We would like to see an approach that is based on the number of occupants, like previous versions of ADF, but with a degree of future proofing so that the system can be adjusted to provide a high level of performance should the circumstances in that property change. For example, where a single occupant lives in a large four-bedroom detached house, the ventilation must be designed on the assumption that all rooms may be occupied in the future.

## Comments on amendments to Approved Document F

The consultation provides limited opportunity to comment on the extensive changes to Approved Document – Ventilation Volume 1 : Dwellings. Below are comments for consideration that fall outside of the consultation questions but we believe should be addressed as part of the consultation.

### **Table 1.3**

As previously detailed, we are disappointed that, as per ADF 2021, assumed occupancy levels are still not included. Assumed occupancy levels were provided in ADF 2010 and, in our experience, proved very useful in correctly ventilating buildings, particularly in existing homes where actual occupancy is known. We strongly believe that assumed occupancies should be re-introduced. Otherwise, many systems will continue to be designed which, while complying with ADF 2021 and the current proposal, in reality will result in many dwellings being under or over ventilated.

#### **1.82 b ii**

We disagree with this proposal for static pressure testing for ducted systems. We assume the intention is to limit energy consumption and running costs. This is already covered under Specific Fan Power limitations in ADL and in our view this is an unnecessary, complicated and expensive requirement which installers would have to pass on to consumers

#### **1.85**

While we agree with the two-metre limitation for intermittent extract fans, we disagree it should apply to dMEV type extract fans. dMEV type extract fans generally involve much smaller air velocities in ducts, which in turn leads to smaller pressure drops. We know from experience and testing that dMEV type extract fans can meet their airflow requirements at low noise levels and within their Specific Fan Power limitations even with very long duct runs and bends.

#### **1.89**

Please see comment in relation to 1.82 b ii.

#### **1.90**

We are surprised that this clause has not been highlighted as one of the major changes to the approved document as it will have major consequences for the ventilation industry. We think this section needs serious consideration for the reasons set out in the comments relating to 1.90 a.

#### **1.90 a**

We disagree with the proposal to increase the requirement for insulation of ducting where it passes through conditioned areas. It would mean that any extract-only fan ducting to atmosphere, through a conditioned space, for example ducting in a ceiling void with a conditioned space above and below, would require an excessive amount of insulation which would serve no purpose. This would also be impractical and difficult to achieve when working in the limited space in between floor ceiling joists. While we can understand the requirement for insulated ducting on an MVHR system between the MVHR unit and outside, the proposed 50mm is too much and should be consistent with the 25mm in 1.90 b.

#### 4.14 d

We disagree with the proposal that a vane anemometer with proprietary hood should be used to measure air flow rates. Many intermittent fans are non constant flow axial flow type fans, and measuring such fans using an anemometer and hood can result in inaccurate readings, hence the [BSRIA Minimum Benchmark approach](#).

We would suggest this is amended to ensure that non constant axial fans should have a powered flow hood to measure them.

#### 4.15 b

We disagree with the proposal for centralised continuous mechanical extract ventilation or mechanical ventilation with heat recovery, to have additional assessments of system performance. We assume the intention is to limit energy consumption and running costs, however this is already covered under Specific Fan Power limitations in ADL and in our view this is an unnecessary, complicated and expensive requirement, which will be challenging to enforce due to additional testing that would be required.

#### Appendix A: Key Terms

We propose that the term “Expert advice” be expanded to include “Certificated Specialist in Dwelling Ventilation (CSDV)”. We understand this is the only domestic ventilation training in the UK market.

#### Table D1, page 63, line 7

Should this read 4,000 mm<sup>2</sup> and not 5,000 mm<sup>2</sup>?

#### Additional comments

We are disappointed that Positive Input Ventilation (PIV) continues to be ignored as a method of ventilation in ADF. This popular form of ventilation is highly utilised in existing dwellings with condensation and mould issues. Inclusion within the building regulations would help to ensure a minimum standard for installations. We issued a [Best Practice Guide](#) for this trusted method of ventilation which should form the basis for this standard.

We are also disappointed that the deduction in the whole dwelling ventilation rate for infiltration when designing MVHR systems allowed for in ADF 2010, removed in ADF 2021, remains omitted in the draft ADF. Not allowing for infiltration by assuming zero air permeability will result in MVHR systems being significantly oversized. This will result in more expensive, noisier and less efficient MVHR systems.

The long term success of any ventilation system is dependent on the occupant understanding the system, how it operates and how it’s maintained. This is of increasing importance as we strive to make our dwellings more airtight and energy efficient. We would like to see the future homes standard used as an opportunity to increase education and awareness of the importance of ventilation systems and encourage installers to help relay this information.

**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?**



We fully support the proposal to extend Regulation 42. In increasingly air-tight buildings, adequate ventilation supports the health and wellbeing of residents and protects the building.

However, the vast majority of installations of ventilation systems in existing dwellings are intermittent fans. As the proposal only seems to extend to MEV's and MVHR systems, there is a risk that installers without the necessary skills and training will use intermittent fans as a 'loophole' for compliance, which will not lead to the required outcome. We suggest that regulation 42 is extended to include intermittent (natural) ventilation.

**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?**

It cannot be underestimated, how critical ventilation is in providing a healthy indoor environment, particularly in increasingly airtight buildings. However it is clear that the current mechanism for maintaining compliance isn't working. Whilst there are existing competent person schemes they are too infrequently utilised and in our opinion provide greater focus on systems almost exclusive to new structures.

The current Competent Person Schemes for ventilation has too much bias on MVHR systems. Whilst they are become more prevalent in new builds, they are too complex and costly to retrofit and do not reflect what most installers would see in real world scenarios.

The lack of training and understanding of systems better suited to existing properties, for example dMEV, and intermittent extractor fans, has led to these systems being poorly installed. [This AECOM study](#) looked at the installation of intermittent and continuously running ventilation systems and illustrated that levels of compliance were extremely low. Whilst this study was conducted prior to the last revision of ADF, we believe little has changed.

We conducted our own poll on ventilation during a webinar in 2020, and over 70% of the delegates (250 specialists) believed that fewer than 30% of installations complied with Building Regulations. Damp and mould issues will continue to affect the thermal effectiveness of buildings and their residents' health, if these issues are not addressed.

The biggest issue with ventilation has never been the technical content of the approved documents, but simply they have not been strictly enforced and for too long there has been an acceptance of poor standards.

Due to the risk to residents' health, there is now an opportunity to link the installation of ventilation systems to the Building Safety Regime to ensure the design, verification and installation of a system receives sign off before being approved for occupancy. This will lead to the need for the upskilling and development of existing Building Control professionals.

## Setting a high standard of competence

We have addressed the lack of training by developing the Certificated Specialist in Dwelling Ventilation (CSDV) qualification. Whilst this qualification is in its infancy (delivered since December 2023) we believe it trains designers and installers to understand the requirements for ventilation systems in new and existing buildings. This should be the benchmark for installers as well as building control professionals, to provide a better understanding of compliant ventilation systems. The course sets out:

- Building Regulations and other Key Documents, including designing ventilation systems for new dwellings
- Diagnosing problems associated with a lack of “Adequate Ventilation” in existing dwellings.
- Assessing Ventilation in existing dwellings.
- Designing and Specifying any additional measures required to provide “Adequate Ventilation” following the Assessment.
- Installation, commissioning, certifying and ongoing maintenance of ventilation systems in dwellings.

We believe this is the only qualification which trains the candidate on residential, rather than commercial, ventilation. We are working to ensure the training is recognised across the construction sector via both the CSCS logo and a Competent Person Scheme, to ensure only those with the correct skills in residential ventilation are able to approve such ventilation systems.

**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.**

We endorse the proposal to provide all residents with a Home User Guide. Occupiers do not always understand how to use the ventilation systems and how to maintain it in the longer term. We would agree that this should be provided both as hard copy and digitally and form part of any future sales pack, to ensure the information is passed between previous and new owners.

From a ventilation perspective, the Home User Guide could help with a lack of understanding around for example, trickle vents, which often results in them not being used and permanently shut, and how to maintain MVHR systems so their efficiency and effectiveness does not decrease over time.

We would also suggest that this Home User Guide is developed in to a log book to retain records of all the servicing and maintenance of building services and remedial works.

**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.**

Our members frequently report that they are providing reports on damp issues where no guidance has been provided to the resident on how to use a ventilation system. Whilst not the role of the Building Regulations we also need to ensure that simple to understand information is provided to the occupants.

**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?**

Providing sufficient information to the user to ensure the long-term success of building services is essential. A logbook should be introduced to record all information relating to the maintenance of the building. Introducing the proposal would almost certainly increase the likelihood that the homeowner is provided with this information.

#### Other Comments

Although not specifically requested within this consultation, ensuring our building stock meets our future needs is essential based on the rapidly changing climate. As air temperature is expected to rise across the country in some months, but with colder winter weather in others, our buildings will need to be built to adapt to these changes. This means that all elements of the building will need to be built with this in mind. For example, these climate changes could impact the rates at which existing ventilation systems are able to work effectively, and guttering/ Downpipes may need to be widened to ensure increased rainfall can be effectively removed from a property, without leading to overflow which could cause damp and mould growth.

In addition, the location of a building may affect how it performs and it therefore cannot be assumed that all existing buildings will react to changes in weather in the same way. Equally, the expected life of new homes may mean that although they are built to high thermal efficiency standards now, they may not perform to the same standards due to the changing environment, in 10 or more years' time.

Finally, there needs to be clarity over what a 'properly heated dwelling with typical moisture production' means. As stated in our response, what occurs in one building may not occur in another. As such, the way any ventilation or damp and mould problems are dealt with, will need to be different in different properties.

The Future Homes Standard is an opportunity to prepare existing and new dwellings for a net zero future. However it must concurrently prepare us for climate changes which will happen, regardless of whether government meets its targets as part of the [Paris Climate Agreement](#).

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