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Full name or organisation's name

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- ☒ Yes
☐ No

Real Estate:Scotland response: summary of key points

About us. Real Estate:Scotland (RES), formerly the Scottish Property Federation, represents the real estate industry in Scotland. Our members include investors, among them institutional pension and life funds; developers; commercial and residential landlords; and professional property consultants and advisers. This response reflects the views of our Sustainability and Building Design Committee and wider membership, and follows our Stage 1 response of 23 October 2024.

We continue to support the ambition to improve the energy performance of new buildings, and we welcome the way the Scottish Government has engaged since Stage 1. Several of the points we raised then are reflected in the Stage 2 proposals, notably the later implementation date, the use of regional climate data and the option of more than one calculation tool. Our main messages are:

- **Viability and investment.** We recognise the need for higher standards, but they must be balanced against the cost of building. Development in Scotland already faces high construction costs and tight margins. A new standard that pushes costs up too far, too quickly, risks making schemes unattractive to investors and funders, and slowing the delivery of the homes and workplaces Scotland needs. Getting this balance right is as important as the level of ambition itself.
- **Phasing and timing.** The move to Autumn 2029 is welcome. As at Stage 1, we favour a phased approach: a voluntary period first, then mandatory application on a date fixed and published in advance. Phasing gives the supply chain time to build capacity steadily, which helps keep costs stable and avoids sudden pressure on skills and materials. The clock should start when the final tools and targets are available, not before (Questions 2 and 3).
- **Level of ambition.** We support 'Good Practice' for new homes and 'Medium' for new non-domestic buildings, with a review point built in. The higher options would add considerable cost, and the BRIA itself puts their net cost at many times that of the middle options, at a time when housing delivery is already under strain (Questions 7 and 16).
- **Non-domestic buildings.** As we said at Stage 1, the non-domestic sector is too varied for a single approach. Because the target tables have not yet been produced, our members cannot yet judge what the proposals will mean for their schemes. Those tables should be consulted on before targets are fixed (Questions 16, 18 and 19).
- **Cost.** The true cost of implementation is still not well understood. The figures in the partial BRIA need to be checked and tested against real projects, and the cost of the new compliance process has not been assessed. Given current electricity and gas prices, occupiers may not see much saving on running costs in the near term.
- **Whole life carbon.** The proposals remain focused on operational energy. At Stage 1 our members showed that doubling wall insulation to reach Passivhaus levels roughly doubles its embodied carbon, stretching the carbon payback period well beyond that of a building meeting current Section 6 standards. We again ask that whole life carbon be reported, with limits on upfront carbon introduced over time.
- **Skills, supply chain and verification.** This remains our biggest concern. Our members do not believe there are yet enough skilled people, contractors or product supply chains to deliver the standard at scale by 2029, and local authority building standards teams are already stretched. The new requirements need to be matched by a Government-supported training programme and properly resourced verification.

- **Future climate.** The proposals concentrate on heating, yet Scotland faces hotter summers as well as cold winters. Design standards should take account of future climate conditions and overheating risk (Questions 5, 15 and 26).
- **Existing buildings and incentives.** Most of the buildings Scotland will have in 2045 already exist, so retrofit offers the biggest gains. Standards written for new buildings, such as the airtightness limit, should not be applied to retrofit or traditional construction. We also repeat our Stage 1 call for incentives, such as rates relief, grants or tax measures, so that developers and occupiers both share in the benefit of higher standards.

Questionnaire

Section 2 – A Scottish equivalent to the Passivhaus standard

Question 1

With reference to the Partial Business and Regulatory Impact Assessment (BRIA) at Annex A of the consultation paper, are you able to provide any information, in confidence, that could aid in the production of the final BRIA?

- ☐ Yes
☒ No

If you have answered 'Yes' please contact the review team at bsdenergystandardsreview@gov.scot

RES does not hold project cost data itself, but we would be glad to help the review team reach members who may be able to share cost information in confidence.

Question 2

Do you have any comments on the merits of introducing the standard on a mandatory basis through a phased implementation?

- ☒ Yes
☐ No

Please provide a summary of the reason(s) for your view:

We support the standard becoming mandatory, provided it is phased in. This is consistent with our Stage 1 response, where we argued that the market, supply chains and workforce all need time to adjust if the development pipeline is not to be disrupted. A phased approach gives manufacturers, contractors and installers the confidence to invest in capacity, and a steady build-up of supply helps avoid the cost spikes that come from sudden demand. That stability matters to investors and funders, who need to be able to price new standards into schemes with confidence.

The phasing should be tied to the readiness of the tools rather than to a calendar date alone. The consultation itself confirms that the Scottish HEM wrapper and Scottish SBEM v7 are still in development, the modified PHPP has not yet been produced, and the non-domestic target tables need further research into 2027. Industry cannot prepare properly against tools that are still changing. We suggest:

- a mandatory date fixed and published in advance, but no earlier than two years after the final versions of the tools and populated target tables are released. Our members estimate that industry needs at least 18 months to upskill;
- a first phase introducing the design and construction statements and the Compliance Handbook, with the new space heating and unregulated energy figures reported for information only;
- domestic targets next, followed by non-domestic targets once their tables have been consulted on;
- transitional protection for schemes already in the pipeline. Projects that have submitted a planning application, or hold planning consent, before the final

guidance is published should be able to proceed under the current standards. Multi-phase sites need their own provision;

- a Government-supported training programme for designers, contractors and verifiers running alongside each phase.

Question 3

Do you have any comments on the merits of introducing the proposed standard initially on a voluntary basis?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes. At Stage 1 we supported a voluntary period ahead of mandatory introduction, and we still do. A voluntary phase would let the final tools, the Compliance Handbook and verification processes be tested on real projects, and would produce the cost and performance evidence that the partial BRIA currently lacks.

To be useful, the voluntary period should have a fixed end date, so that it leads to mandatory application rather than replacing it. We would also like to see:

- a clearly defined voluntary route, for example through the optional upper levels of standard 7.1;
- early adoption on public sector and grant-funded projects, and incentives to encourage private developers to take part;
- funded pilot projects across commercial sectors such as offices, retail and industrial, as we proposed at Stage 1, so that the standard can be refined for non-domestic buildings;
- participating projects sharing data on design and tested airtightness, and on modelled and actual energy use;
- training delivered during this period, so that the workforce is ready before the standard becomes mandatory.

Section 3 – Primary compliance metric – delivered energy

Question 4

Do you agree with the proposal to present unregulated loads as information within reported outputs from the compliance calculation?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes, as a first step. At Stage 1 we argued that unregulated energy can make up a large share of a building's total use and should not be ignored, so we welcome it being reported. We agree that it should not form part of the compliance calculation at this stage, as developers cannot control how occupiers use their buildings. We would ask that:

- the figures are presented as indicative, based on standard occupancy assumptions, so that they are not mistaken for a prediction of energy bills;
- the same method is used across HEM, SBEM v7 and the modified PHPP;
- the treatment of on-site generation is made clear. Section 3.2 credits generation against plug-in loads, which means unregulated energy could affect the compliance result indirectly;
- minimum efficiency expectations are considered for known fixed equipment such as lifts, while recognising that reporting tenant and portable loads would be very hard to enforce;
- reporting is accompanied by guidance for occupiers on running their buildings efficiently, as we suggested at Stage 1.

Section 4 – Secondary compliance metric – space heating demand

Question 5

Do you agree with the proposal to introduce a target space heating rate that only includes elements of the specification related to the fabric performance?

- ☐ Yes
- ☒ No

Please provide a summary of the reason(s) for your view:

Not as currently proposed. At Stage 1 we did not see a space heating limit as necessary, and said that if one were introduced it should be phased and should take account of embodied carbon. Our members still have reservations, although they welcome separating the target from the ventilation system so that mechanical ventilation cannot make up for weaker fabric. Our concerns are:

- a target based on heating alone is too narrow. Members would prefer a fabric measure that considers both peak heating and cooling demand, so that designs do not perform well in winter but overheat in summer;
- higher insulation levels add embodied carbon, and without whole life carbon reporting the trade-off is invisible;
- Tables 3 and 8 contain no actual values, so the level of challenge cannot be judged, and what 'fabric only' includes has not been defined;
- the result will not be comparable with the Passivhaus limit of 15 kWh/m²/yr, which allows for heat recovery, so describing it as a Passivhaus equivalent could mislead clients and occupiers.

If a target is pursued, we suggest that the space heating figure is reported for information only during the first phase, with a limit considered once actual values have been consulted on and evidence gathered.

Section 5 – New dwellings

Topic – Level of challenge for new dwellings

Question 6

Do you have any comments on the roof U-value proposals across the Good and Best Practise options noting that these represent a relaxation in the level of challenge for this element?

- ☒ Yes
☐ No

Please provide a summary of the reason(s) for your view:

We question why the roof alone is relaxed. Both proposed options set the notional roof at 0.11 or 0.10 W/m²K, weaker than the current 0.09 W/m²K, while other elements are tightened (Table 2), and no reason is given. A roof of 0.09 W/m²K is routinely achieved today. Roofs account for a large share of heat loss in detached houses, bungalows and top-floor flats, and flat roofs in particular are costly to upgrade later. We suggest keeping the current value unless a cost or buildability case is published, and asking the research to show how much of the Good Practice cost saving comes from this change.

Question 7

What uplift to the current energy standards for new dwellings do you consider appropriate as an outcome of this review?

- Option 1: 'Good Practice' standard (6% emissions reduction) ☒
Option 2: 'Best Practice' standard (37% emissions reduction) ☐
Option 3: Retain current standard (0% emissions reduction) ☐
Other (please specify) ☐

Please provide a summary of the reason(s) for your view:

We support Option 1 (Good Practice) as the most ambitious level that can realistically be delivered when the standard is introduced. We do not support Option 2 at this stage:

- our members do not believe the industry is ready for it. Option 2 assumes very high airtightness (1.5 m³/(h.m²)), mechanical ventilation with heat recovery throughout and triple-glazing-level windows, at the same time as the move from SAP to the Home Energy Model. As at Stage 1, skills, supply chain capacity and rising build costs are the main barriers;
- the cost is much higher. The partial BRIA puts the national net cost of Option 2 at £811m against £62m for Option 1. In a housing emergency, members expect a higher standard to slow the delivery of new homes and make some sites unviable. Residential development, including build to rent, depends on institutional investment, and a significant rise in build costs without a matching rise in value could make Scottish schemes less attractive to investors than those elsewhere;
- the benefits to occupiers are less certain than they appear. Savings depend on ventilation systems being maintained, which is a particular concern in rented and

social housing, and current electricity prices relative to gas limit the running cost savings that households will see.

We would ask the Scottish Government to:

- correct the figures before a decision is taken. The emissions saving for Option 1 is given as both 6% and 6.5%; the national energy savings in BRIA Table 9 appear to repeat the per-household figures, suggesting a units error; and Option 1 shows a lower capital cost in one table but a £213m cost uplift in another;
- resolve the overlap between Option 1's notional airtightness of 3 m³/(h.m²) and the ventilation guidance under standard 3.14, which recommends mechanical supply and extract below that level;
- reconsider basing the 'any other solution' notional on direct electric heating, which could allow homes with high running costs to comply, against fuel poverty objectives;
- build in a review, around five years after implementation, to consider moving towards Option 2 once the evidence and the workforce are in place.

Topic – For new dwellings connecting to a communal heating system

Question 8

Do you support an approach to enable recognition of higher efficiency generation within a development regardless of whether it takes place within individual buildings or a communal heating system?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes. Recognising efficient communal systems avoids pushing developers towards individual heat pumps where a shared system would perform better. This needs clear rules: what counts as 'within the development' and who is a 'suitably qualified party' should be defined, and that party should be independent of the heat supplier. The efficiency used should allow for distribution losses and be checked against metered data once the system is running. Guidance is also needed for phased sites, where homes may be completed before the energy centre is built, and on who carries the risk if the system underperforms.

Topic – Cost neutrality

Question 9

Are you currently designing or building dwellings to the February 2023 standards and able to share cost information in confidence for any of the available heat solutions?

- ☐ Yes
- ☒ No

If you answered 'Yes', please contact the review team on bsdenergystandardsreview@gov.scot

Topic – Method of target setting for new dwellings

Question 10

Do you support the proposal to allow the target rates for dwellings to fluctuate based only on the location, orientation, archetype and heat source of the dwelling?

- ☒ Yes
- ☐ No

Please provide a summary of the reason(s) for your view:

Yes, in principle. At Stage 1 we supported relative targets and the use of regional climate data, and a smaller, clearly defined set of variables should make targets easier to understand. We have some practical points:

- the method for assigning a site to one of the 14 weather files should be published, with attention to altitude and exposure, which vary widely within a region;
- four archetypes do not reflect what is built. Semi-detached houses, bungalows, maisonettes and flats above shops, and the difference between top, middle and ground-floor flats, should be recognised;
- it should be confirmed whether size and shape still follow the actual dwelling. If they do not, tight urban and infill sites could be penalised;
- the heat source categories should make clear where ground source and exhaust air heat pumps, hybrid systems and bioenergy fit.

Question 11

Do you agree with the proposal to present the target rates for dwellings within a target range table, replacing the notional dwelling specification currently shown in Table 6.1 in the Technical Handbooks?

- ☐ Yes
- ☒ No

Please provide a summary of the reason(s) for your view:

We would welcome range tables as additional guidance, but not as a replacement for the notional dwelling specification. The notional specification is what designers, smaller developers and self-builders use to arrive at a likely compliant design at an early stage. A range shows an outcome but not how to reach it, and a design that falls within the range could still fail its own target, which risks costly redesign later. As

the tables in the consultation contain no values yet, their usefulness cannot be judged. We suggest keeping the notional specification and publishing range tables alongside it, once actual values have been consulted on.

Topic – Fabric performance for new dwellings

Question 12

Do you agree with the proposal to set a provision in guidance for a maximum ‘upper limit’ to the declared design air infiltration rate?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes, for new dwellings. Our members consider 5 m³/(h.m²) achievable; it matches the current notional value, and the BRIA reports that average test results are already better than this. At Stage 1 we asked for flexibility in how fabric performance is achieved, and a justification route rather than a hard cap allows that. We would ask that:

- guidance makes clear whether this is a limit or a trigger for a justification statement, and states the units;
- the consequences of a test result that is worse than the design value are set out;
- the provision applies to new build only. It is not workable for retrofit and could harm many of the traditional building types found across Scotland.

Topic – Standard 6.1 approved compliance methodologies for new dwellings

Question 13

Do you have any views or comments on the development and usability of the consultation version of the HEM/Scottish wrapper for new dwellings?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

At Stage 1 we welcomed the Home Energy Model, but asked how a Scottish wrapper would differ from the UK version and asked for any new method to be tested against real performance data. Those points still stand. Our main comments are:

- the level of challenge was modelled on an earlier version of HEM than the consultation tool, and the final tool will be based on a later version again. Targets need to be recalibrated in the final version;
- HEM reports considerably higher delivered energy than SAP for the same home, roughly a third to three quarters more in the modelling (Table 5). Clients, funders, valuers and buyers will need a clear explanation of why the figures change;

- commercial software, assessor training and the link to the reformed EPCs must be in place before the tool becomes mandatory;
- differences from the version used in England should be kept to a minimum, to limit costs for developers and software providers working across the UK;
- a fixed final version and a period of running alongside SAP are needed.

Question 14

Do you agree with the proposal to recognise a modified version of PHPP as an additional tool that implements the approved methodology for standard 6.1 'Energy demand' for new dwellings?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes, as an optional tool. At Stage 1 our members reported that PHPP is time-consuming, needs detailed information that is often not available early in design, and is less suited to apartment blocks, so it should not be required. For those already designing to Passivhaus, recognising it avoids modelling the same building twice. This should be on condition that:

- the choice of tool does not change the compliance outcome. The research shows differences of up to around 28% between HEM and PHPP for the same dwelling;
- the same climate data, occupancy and other inputs are used in each tool;
- the Scottish Government controls the version, licensing and updates of the modified tool;
- verifiers are trained to check PHPP submissions, and PHPP users are not required to produce a second model for the EPC.

Section 6 – New non-domestic buildings

Topic – Level of challenge for new non-domestic buildings

Question 15

Do you have any comments on the cooling efficiency proposals across the Medium and High options noting that these represent a relaxation in the level of challenge for this element?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

We do not see the case for weakening the cooling efficiency target. Both new options set a lower notional cooling efficiency than the current standard (Table 7). With a warming climate and better insulated buildings, cooling is likely to become more important over a building's life, not less. The UK Health Security Agency recorded 1,504 heat-associated deaths in England in summer 2025, a reminder that

overheating is a growing risk that Scotland should plan for. Unless evidence is published to justify the change, we suggest keeping the current value.

Question 16

What level of uplift to the current energy standards for new non-domestic buildings do you consider should be introduced as an outcome of this review?

Option 1: 'Medium' standard (10% emissions reduction) ☒

Option 2: 'High' standard (11.5% emissions reduction) ☐

Option 3: Retain current standard (0% emissions reduction) ☐

Other (please specify) ☐

Please provide a summary of the reason(s) for your view:

We support Option 1 (Medium), with conditions. At Stage 1 we warned that there was little evidence of how the wide range of commercial buildings could meet a Passivhaus-type standard without affecting viability, rents and occupier demand. Stage 2 has not yet resolved this, as the non-domestic target tables have not been developed. Our reasons and conditions are:

- the High option adds only 1.5 percentage points of emissions savings, but the BRIA puts its net cost at £330m against £33m for Medium, with capital costs up to 11% higher for retail. Our members consider High difficult to achieve with current industry skills;
- even Medium adds up to 7% to retail build costs. In commercial development, higher costs feed through to rents and rates and can make new buildings less attractive to occupiers. As at Stage 1, the savings on running costs do not always reach the developer or investor who pays the higher capital cost. The effect on viability, investment decisions and asset values should be tested further, including through the funded pilots we proposed at Stage 1;
- the figures need checking. The emissions savings and tonnages differ between the consultation and the BRIA (for example 6.2 kt against 62 kt), and the option numbering is reversed between the two documents;
- our support depends on the target tables being consulted on before they are adopted;
- a review point should be built in. Members recognise that higher standards for new buildings would build skills that benefit the retrofit market and free grid capacity for existing buildings to electrify, and the level could rise once industry is ready.

Topic – For new buildings connecting to a communal heating system

Question 17

Do you support an approach to enable recognition of higher efficiency generation within a development regardless of whether it takes place within individual buildings or is communal?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes, on the same basis as Question 8. For non-domestic and mixed-use sites, guidance should also cover campuses and developments where one energy centre serves buildings delivered at different times, how efficiency is shared between buildings with different patterns of use, and connections beyond the development boundary. Metered data should be used to confirm the declared efficiency once the system is operating.

Topic – Method of target setting for new non-domestic buildings

Question 18

Do you agree with the proposal to allow the building target rates to fluctuate based only on the location, building type, activity types, heat source and orientation of the new building?

☐ Yes

☒ No

Please provide a summary of the reason(s) for your view:

Not yet. At Stage 1 we stressed that the non-domestic sector covers buildings of very different size, use and servicing, and that standards should be flexible enough to reflect this. We are concerned that:

- if the target no longer reflects how a building is heated, cooled and ventilated, buildings that genuinely need mechanical cooling, such as deep-plan offices, laboratories and healthcare buildings, may struggle to comply;
- it is not clear how speculative, shell and core, and process-heavy buildings will be treated, which matters for much commercial development;
- with 22 building types and many activity types, targets will still vary widely, so the benefit of simplifying is limited.

We would be able to take a view once the planned research on non-domestic target tables has been published and consulted on.

Question 19

Do you agree with the proposal to present the target rates for new non-domestic buildings within a target range table, replacing the notional building specification currently shown in Table 6.1 in the Technical Handbooks?

- ☐ Yes
☒ No

Please provide a summary of the reason(s) for your view:

Not at this stage. The consultation accepts that more research is needed before the non-domestic tables can be presented usefully. Until real values are available, our commercial members cannot test their schemes against them, and ranges covering every location, activity and orientation are likely to be too broad to guide design. We suggest keeping the notional building specification, which designers and verifiers rely on, and adding range tables for common building types once they have been consulted on.

Topic – Fabric performance for new non-domestic buildings

Question 20

Do you agree with the proposal to set a provision in guidance for a maximum 'upper limit' to the declared air infiltration rate?

- ☒ Yes
☐ No

Please provide a summary of the reason(s) for your view.

Yes, for new buildings and on the same basis as Question 12. A threshold of 5 m³/(h.m²) is less demanding than the current non-domestic notional value of 4, so it should be achievable. Guidance should explain how it applies to large buildings tested in zones, warehouses with large loading doors, and shell and core buildings where the occupier's fit-out may affect airtightness.

Topic – Standard 6.1 approved compliance methodologies for new non-domestic buildings

Question 21

Do you have any views on the development and usability of the consultation version of the Scottish SBEM v7?

- ☒ Yes
☐ No

Please provide a summary of the reason(s) for your view:

Our main points are:

- the non-domestic options were modelled in SBEM v6.1, but compliance will use the Scottish SBEM v7. The effect of this change is not reported, and targets should be recalibrated in the version that will be used;
- many complex non-domestic buildings are modelled with dynamic simulation software rather than SBEM. The consultation does not say how those tools will be approved against the new Scottish method, which could leave complex projects without a clear compliance route;
- differences from the UK version of SBEM should be kept to a minimum and clearly documented;
- a fixed final version, a period of running alongside the current method, and training for assessors and verifiers are needed before it becomes mandatory.

Question 22

Do you agree with the proposal to recognise a modified version of PHPP as an additional tool that implements the approved methodology for standard 6.1 'Energy demand' for new non-domestic buildings?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes in principle, but only once its results have been shown to match SBEM. At Stage 1 we suggested that PHPP could be used alongside SBEM for non-domestic buildings, drawing on the strengths of each. However, the Stage 2 research shows large differences between the two tools for some building types: for a secondary school, 32.5 against 13.0 kWh/m²/yr, and for a distribution warehouse, 38.6 against 20.3 (Table 10). PHPP is also less suited to large buildings with several zones, significant cooling or mixed uses. Recognition should therefore be limited to building types where the two tools have been shown to give consistent results, so that the choice of tool cannot be used to gain an advantage.

Section 7 – Ventilation and indoor air-quality

Question 23

Do you agree with the proposal to accept any ventilation system/solution of achieving the performance sought in standard 3.14 'Ventilation'?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Yes. We support a performance-based approach rather than requiring a particular system. MVHR should be encouraged where it suits the building, but at Stage 1 we noted that it relies on regular maintenance and correct use, and that poorly maintained systems can lead to overheating, heat loss and mould. It is also costly to install, run and maintain. Allowing any compliant system should be matched by a

clear method for choosing the right system for the building's tested airtightness, proper commissioning, and good handover information for occupiers.

Question 24

Do you have any views on additional guidance for MVHR systems that would be beneficial to be included in future guidance?

- ☒ Yes
☐ No

If you answered 'Yes' please provide details for your response:

Yes. At Stage 1 we called for proper guidance and training on MVHR, and we would like future guidance to cover:

- location of units within the insulated envelope, with easy access for filter changes and maintenance;
- duct design and insulation, noise limits in habitable rooms, and fire stopping where ducts pass through walls and floors in flats;
- summer bypass and the fact that MVHR does not cool a building, so a separate strategy for overheating is still needed;
- commissioning to a recognised procedure, and installer competence;
- occupant training and maintenance information as part of the handover documents, with particular attention to rented and social housing;
- post-occupancy evaluation, to build evidence on which building types benefit most.

Question 25

Do you have any views on the proposal to decouple the link between fabric air infiltration and ventilation solution?

- ☒ Yes
☐ No

If you answered 'Yes' please provide details for your response, in particular thoughts on methodologies that could be implemented to determine the appropriate ventilation solution:

We support separating the two. Air leakage is uncontrolled and unpredictable, so it should not be relied on to ventilate a building. A practical approach would be for the ventilation system to provide the full required rate without counting on any leakage, to choose the system with the building's likely tested airtightness in mind, and to confirm performance through measured flows at completion. Demand-controlled ventilation using CO₂ and humidity sensors should be recognised where appropriate. This review should be carried out together with the level of challenge, as Option 1 places the notional dwelling exactly at the current 3 m³/(h.m²) threshold in the ventilation guidance.

Section 8 – Overheating

Question 26

With regards to the proposal to reference the use of PHPP as an additional overheating risk assessment methodology option, do you know of any risks and opportunities that should be considered to inform the development of draft guidance?

- ☒ Yes
- ☐ No

If you answered 'Yes', please provide information summarising your experience:

Yes. Our members have concerns about using PHPP to show compliance on overheating, and do not support it as a standalone method at this stage:

- PHPP looks at the building as a whole, so it can miss individual rooms that overheat, such as a living room or kitchen at midday, or a top-floor or single-aspect bedroom;
- CIBSE TM59 is already widely used and assesses individual rooms, including bedrooms at night. Two methods with different tests could give different answers for the same design;
- fixed temperature limits do not reflect how people adapt to the seasons. The same temperature feels very different in December and in midsummer, and this could lead to oversized cooling equipment;
- the assumptions about opening windows may not hold on urban sites affected by noise, security or air quality;
- all methods should use future climate data. At Stage 1 we highlighted the risk of overheating in larger, multi-occupancy buildings, and this risk will grow.

Using the same model for energy and an early check on overheating could save time. If PHPP is referenced, we suggest limiting it to early-stage screening and lower-risk homes, with TM59 or dynamic modelling still required for higher-risk cases.

Section 9 – Compliance and Assurance

Question 27

Do you have any comments on the structure of the proposed Building Standards Energy and Environmental Compliance Handbook and its application for the production of the Energy and Environmental Design and Construction Statements?

- ☒ Yes
- ☐ No

Please provide a summary of the reason(s) for your view:

We welcome a single Handbook. At Stage 1 we asked for guidance that is flexible rather than prescriptive, leaves room for different ways of achieving the same result, and sets out clearly what is needed at each stage, particularly before building warrant. With that in mind:

- the Handbook should make clear which actions are minimum requirements and which are examples, and that other forms of evidence are acceptable;

- expectations should be proportionate. The same requirements should not apply to a single house and a large mixed-use scheme;
- with 32 local authority verifiers, open-ended wording will be applied inconsistently. Clear national expectations and digital submission would help;
- the schedules should be updated to reflect the final tools, as they still refer to SAP;
- the Handbook should explain how it fits with the Compliance Plan Approach, so that work is not duplicated.

Question 28

Do you have any comments on the presentation of the principle of communication and collaboration throughout the Handbook?

- ☒ Yes
- ☐ No

Please provide a summary of the reason(s) for your view:

We support the emphasis on communication and collaboration and, as at Stage 1, the importance of engaging early with verifiers. In practice, however, responsibilities depend on how a project is procured. On design and build projects, designers are often novated to the contractor and parts of the design are completed by subcontractors. The Handbook should explain how design evidence is handed over and kept up to date when this happens, and should avoid suggesting that designers are responsible for construction evidence they do not control.

Question 29

Do you have any comments on how the use of the Handbook could help to mitigate the risks associated with achieving compliance?

- ☒ Yes
- ☐ No

Please provide a summary of the reason(s) for your view:

A structured approach to evidence should help close the gap between design and actual performance, particularly for airtightness, thermal bridging and ventilation. For it to reduce rather than add risk:

- verification must be properly resourced. Our members already experience a shortage of skills in building standards teams, and expect delays at warrant and completion unless verifiers have the capacity and training to review the additional evidence;
- verifier response times on changes and substitutions during construction must be realistic, or programme risk will fall on clients;
- photographs are not a substitute for competent inspection, and independent inspection should be encouraged for complex or high-risk work;
- evidence already gathered for warranty providers, clerks of works or Passivhaus certifiers should be accepted.

Question 30

Do you have any comments on the emphasis made within the Handbook on robust evidence gathering and effective process management to aid in achieving compliance.

☒ Yes

☐ No

Please provide a summary of reason(s) for your view:

We support the focus on evidence, but the requirements should be clear and proportionate. The Handbook should be specific about how much evidence is needed and in what form, who owns and stores it after completion, and accept evidence already collected for other purposes. Simple digital templates would help consistency. As we said at Stage 1, more weight should also be given to post-occupancy evaluation, as many low energy buildings perform differently in use than at design stage.

Question 31

Do you agree with the roles and responsibilities of the actors identified in the Handbook related to the production of the Energy and Environmental Design and Construction statements?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

Broadly yes. As we said at Stage 1, setting out who does what at each stage is the right basis for the guide. Some points need clarification:

- where an agent signs the design statement, it should be clear what they are confirming, particularly where energy modelling or services design is carried out by others;
- competence expectations for energy modellers, airtightness testers and commissioning engineers should be defined;
- the Compliance Plan Manager role could help coordinate the process, but it is not yet in law and the Handbook should not rely on it informally;
- the new roles are likely to mean extra appointments and costs for projects, which the BRIA describes only as small on-costs. These should be quantified;
- the statements should not shift legal responsibility from the relevant person and owner to designers or contractors.

Question 32

The Handbook focusses on five energy and environmental considerations:

- Airtight construction
- High performance insulation
- Thermal bridge free design
- Ventilation
- Optimised energy use

Do you have any comments on the use of these considerations as main themes throughout the Handbook?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

The five themes are a sensible framework. We suggest that windows and solar control are treated as a theme in their own right, given their role in both heat loss and overheating; that overheating is reflected explicitly, as it falls within the scope of the statements; and that commissioning and handover are given more prominence, as they determine whether systems perform as intended. A simple table linking each standard to the themes would help users.

Question 33

Focussing on the associated schedules to the Handbook, do you have any comments on the actions identified to prove compliance with the standards?

☒ Yes

☐ No

Please provide a summary of the reason(s) for your view:

The schedules are a useful checklist, but would benefit from revision:

- each schedule should set a clear minimum, rather than lists that 'should include, but not be limited to' certain items;
- requirements should describe outcomes rather than prescribe workmanship. For example, insulation laid in two layers with offset joints does not suit every form of construction;
- some cross-references are wrong (for example, domestic sections citing the non-domestic guide and the reverse, and 'BS 12207' rather than BS EN 12207), and references to SAP should be updated for the new tools;
- guidance should state that the tested airtightness is used in the as-built calculation, and what happens if that calculation fails.

End of questions