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Scottish Building Regulations: Proposed Changes to Energy Standards Including Ventilation, Overheating and Electric Vehicle Charging Provision (July 2021)

Scottish Government Response

June 2022

Index

Introduction

This document summarises the Scottish Government response to the proposals set out in the 2021 consultation 'Scottish Building Regulations: Proposed changes to Energy Standards and associated topics, including Ventilation, Overheating and Electric Vehicle Charging Infrastructure'.

It covers the topics set out in section 2 to 6 of that consultation:

- Newbuild standards – level of ambition, impact and deliverability;
- Specific provisions to support the transition to low and zero emissions heat solutions, including a focus on reducing energy demand for heating;
- Changes to improve the specification of individual elements in new and existing buildings which are also deliverable and, for building services, aligned to a UK-wide specification/approach;
- Assurance that change does not increase the risk of unintended consequences for other aspects of building performance or function – ventilation and overheating risk; and
- Reviewing how the building standards process can support better outcomes and performance in practice through more robust compliance processes;

Summary of consultation responses

Consultation activity ran from 26/07/2021 to 28/11/2021 and received a total of **176 responses**.

Category of Respondent	Number	Percentage
Individuals	20	11%
Advisory Body/Committee	2	1%
Commercial Organisation (other)	8	5%
Contractor/Developer	24	14%
Designer/Consultant	13	7%
Housing Provider/RSL	4	2%
Industry Association/Manufacturer	46	26%
Local Authority	21	12%
NDPB/Agency	4	2%
Other (please specify below)	19	11%
Professional Body	7	4%
Voluntary Organisation	9	5%
Total	176	

The consultation period was extended in August to reflect the lack of initial availability of consultation versions of energy calculation tools and extended further in October in response to a request for more time for analysis from Scottish house builders.

Of the 176 responses received, 156 were from organisations and 20 were from individuals.

Note that responses submitted from individuals are not categorised by organisation type, even where an organisation type is noted by the respondent. For information only, of the 20 responses by individuals, one respondent identified as 'Voluntary Organisation', two respondents identified as 'Local Authority' and 8 respondents identified as 'Designer/Consultant'. 22 Organisations chose 'Other'. Three of these were assigned to 'Industry Association/Manufacturer'. Of the remaining 19, declared organisation type is set out below:

- 4 of Charity/Third Sector;
- 1 each - Approved Organisation; Collaboration between Local Authority, Academic Body, Housing Provider/RSL & Contractor/Developer; Community and business group; Competent Person Scheme; Development Manager / Landowner; EV Advocacy Organisation; Fire and Rescue Service; Construction industry compliance and competence bodies; Membership body; National House Building Council; Not for profit organisation; Professional Body, Industry association/manufacturer and Advisory body/committee; Profit for purpose research organisation; Regulated Electricity Network; and Non-Governmental Organisation

Of the 176 responses received, 43 respondents instructed that their responses should not be published. Of these 43 responses, 5 were from individuals and 39 from organisations.

Accordingly, following final QA checks, 133 consultation responses were published on the consultation webpage.

The full consultation analysis and report is published separately at: https://www.gov.scot/isbn/9781804356012. Readers may find it useful to read this summary of actions alongside the consultation report.

Changes set out below are implemented via The Building (Scotland) Amendment Regulations 2022 and the 2022 Scottish Building Standards Technical Handbooks. Full information on that implementation and all supporting documents are published at: Building regulations - Building standards - gov.scot (www.gov.scot).

Summary of actions taken forward

Note that references in the following sections are to the numbered questions in the original consultation document.

Readers may find it useful to read this summary of actions alongside the consultation report.

Consultation section 2 – Energy, new buildings

Question 1 - Proposal for an energy target for new buildings

With the pending move to 'zero direct emissions' heat in new buildings, the consultation proposed the introduction of a new energy target, to provide a continued means of defining targets for overall building performance following the introduction of the New Build Heat Standard from 2024. This metric will also enable a clearer focus, under regulation, on action that is effective at reducing energy demand. Views were sought on this intent and on the most suitable metric for the new target.

Response – Question 1:

The approach proposed within the consultation – introduce new energy target – will be progressed using delivered energy as the metric with reporting of both primary and delivered energy via software tools.

There was strong support for a new energy target. Whilst recognising a greater proportion of respondents favoured primary energy, we have confirmed delivered energy as a more direct and meaningful metric for reporting of building performance.

Questions 2 & 4 - Level of improvement for new homes

We consulted on two potential levels of improvement on current emissions targets set for new dwellings. In developing proposals for consultation, officials were aware of Ministers' desire to drive improvement in energy standard for new homes as far as was practicable.

- The 'improved option, which was assessed at delivering a 32% reduction in annual emissions, is based upon the premise of deliverable change, focussing on critical elements such as the need to drive a 'fabric first' approach in new homes and broader action effective in reducing energy demand, whilst setting realistic improvement targets in anticipation of the further impact of the 2024 New Build Heat Standard.
- The 'advanced' option, which is assessed at delivering a 57% reduction in annual emissions, was specified to replicate a specification similar to that used in design standards such as Passivhaus. There is awareness that such an approach may potentially be too challenging to deliver at scale at this time but also of the need to seek a response from stakeholders to that level of challenge.

We also sought views on the elements forming the specification of the proposed notional buildings (Question 4)

Response – Questions 2 & 4:

There was strong support for raising performance targets. Noting that a slightly higher proportion of responses favoured the higher of the two options proposed, we will, at this time, progress Option 1 (improved) to deliver an aggregate 32% reduction in emission over Current standards.

This will be taken forward incorporating useful changes to aspects of the notional building specification based on consultation responses.

Questions 3 & 5 - Level of improvement for new non-domestic buildings

In developing proposals for consultation, again officials were aware of Ministers' desire to drive improvement in energy standard for new buildings as far as was practicable. For the non-domestic sector, the greater variety of building types, forms and construction solutions do not lead to as clear a picture of current good practice. Information recorded on the specification of buildings on completion is also less detailed than for new homes and therefore required a greater level of inference.

We consulted on two potential levels of improvement on current emissions targets set for new dwellings – Option 1 'medium' and Option 2 'high'. These were assessed as potentially delivering an annual abatement/policy life abatement of 16%/14% and 25%/21% respectively.

We also sought views on the elements forming the specification of the proposed notional buildings (Question 5)

Response – Questions 3 & 5:

There was strong support for raising performance targets. Respondents favoured the higher of the two options. We will implement a hybrid solution considering values between Option 1 and Option 2 which should result in overall abatement in the range between a 16% and 25% reduction in greenhouse gas emissions.

As with the response to domestic targets, a number of specification changes will be considered in determining the amended specification for new non-domestic buildings.

Questions 6 & 7 - Simplifying the domestic and non-domestic notional buildings.

Recognising the intent to move to 'zero direct emissions' heat solutions from 2024, we proposed that targets be set using a smaller range of notional building options, focussing on two fuel types – heat pump and other solutions (represented by mains gas). Plus a variant approach for new buildings connected to a heat networks.

Views were sought on this approach for new domestic and new non-domestic buildings.

Response – Questions 6 & 7:

There was majority support for the simplification of the range of national building specifications. Strong support for raising performance targets. Respondents recognised the benefit of an intermediate step prior to 2024 but also flagged concerns over the fuel specification approach, suggesting alternatives.

We will implement the proposed two specification approach, noting further amendments for supplied heat solutions (see question 9).

Question 8 - Space & water heating in the non-domestic notional building

It was proposed that assignment of fuel used for water heating in the Non-domestic notional building be considered separately from space heating. Assignment of systems will be based on the level of hot water use associated with building activities – how or low usage – dictating the strategy applied within the notional buildings. The intent being that this enables a more flexible and representative illustration of demand.

Response – Question 8:

There was majority support for this proposal with comments provided by around a third of respondents. We will progress the amended approach to this aspect of the calculation methodology as proposed.

Question 9 - New approach to supplied heat connections

Following the intent to address the characteristics of supplied heat through separate regulations made under the Heat Networks (Scotland) Act, we proposed to refocus the approach to demonstrating compliance with the revised standard 6.1 on actions which can be delivered at a building level, at the point of original construction, to reduce energy demand and therefore associated emissions.

The approach set out was to demonstrate compliance against the 'gas' notional building, but calculating energy demand totals for the actual building using grid electricity rather than default or network-specific values for supplied heat.

Response – Question 9:

There was strong support for the proposed approach to remove barriers to heat network connections and to maintain the principle that the building specification should not be influenced directly by the current characteristics of the supplying heat network.

Implement as proposed but amend the calculation approach to use network characteristics in a neutral way, applying the same criteria to both notional building and actual building, rather than the proposed 'electric' solution.

Question 10 - Limiting benefit from on-site generation of power

With the emphasis on solutions which are effective at reducing delivered energy at a building, the consultation proposed a deviation from the established approach to assigning benefit from on-site generation of power. Excluding any generation where the source is not directly connected to the building electrical system. Excluding the export component from the compliance calculation given that no benefit accrues at the building from that portion of generation.

Response – Question 10:

There was an understanding of the intent behind this amendment to the calculation of targets and how they are met and broad support. Maintain the proposal as consulted upon and exclude the calculated export component from the standard 6.1 compliance calculation.

Question 11 - Standard 6.1 and zero direct emissions heat solutions

Confirmed proposals for 2024 under the New Build Heat Standards would act to prove the use of heat solutions that generate carbon dioxide emissions at the building, removing the option to install building-level combustion solutions. Heat solutions from 2024 would be 'zero direct emission' solutions.

The consultation proposed that the adoption of such 'zero direct emissions' solutions from 2022 should be recognised by removal of the need to demonstrate compliance against an emission target. The requirement to reduce emission being met instead by the choice of heat solution. With the introduction of a new energy target, there would still be an overall performance metric applied to all new buildings to further the reduction of delivered energy.

Response – Question 11:

There was majority support for this proposal. Apply proposal as consulted upon and exclude buildings using only 'ZDE' heat solutions from the standard 6.1 emissions target compliance calculation.

Question 12 - Design for future retrofit of zero direct emissions heat

Consultation proposals amend the range of fuel solutions used within our notional buildings but do not prescribe against the continued use of fossil fuels or other combustion solutions from 2022. Regulation on that topic will be introduced in 2024.

Proposals do, however, seek to give assurance that subsequent retrofit of new buildings with 'zero direct emissions' hear will be simplified by direct consideration of such a change within the original design and construction process. Written information detailing how this would be implemented without disruption outwith the location of the heat source would also be provided.

Response – Question 12:

There was very strong support for this proposal. Maintain the proposal as consulted upon and review supporting guidance to make the level of detail on practicality of implementation of the retrofit solution explicit.

Question 13 - Fabric performance of new dwellings

We reported that levels of fabric performance in new homes did not increase appreciably with the introduction of the 2015 energy standards. It was noted that this was a function both of the flexibility inherent in how emission targets could be met and the relative cost of delivering fabric improvement compared to other solutions such as the installation of photovoltaics as a means of reducing calculated emission totals.
A stated aim of this review was to focus on solutions which were effective at reducing energy demand. A stronger 'fabric first' approach for new homes is a key component in this, leading to a deliverable and permanent reduction in space heating demand.

The level of challenge was set to reflect the best half of current construction specification and it was also proposed that greater flexibility in solutions be supported by defining the target as an overall space heating demand (similar to the 'useful energy for space heating' target under standard 7.1 or the target fabric approach in England) rather than simply rely upon maximum elemental values.

Response – Question 13:

Maintain the proposal as consulted upon, implement using 'Option 1' values and place emphasis on the use of the overall space heating demand calculation as a more flexible means of meeting the standard.

Questions 14 to 17 - Changes to airtightness testing regime

Five points were raised in relation to changes to the regime for airtightness testing of new buildings, covering the proposal to increase the level of testing to, effectively, every new building (noting most ND buildings and 1 in 3 new homes are already tested); the adoption of a new published testing methodology (CIBSE TM 23) and introduction of the option to undertake low pressure 'pulse' testing (at 4 Pa) as an alternative to the established 'blower door' 50 Pa test method. Similar issues are being discussed in each of the UK administrations.

Response – Questions 14 to 17:

Responses to proposals were positive across these series of questions, though caveats were also offered on the new elements (methodology and alternate test procedure) being introduced. Maintain the proposal as consulted upon, moving to the presumption of 'test every new building' with limited exceptions.

The updated CIBSE TM 23 will be cited and other supporting documents referenced appropriately. The option to introduce low pressure pulse testing will be introduced to run alongside the current blower door test.

We will review and update our supporting document on airtightness testing to give further information on the new regime and the application of the testing options. This will be done in partnership with testing organisations and verifiers.

Question 18 - Modular buildings

Consultation proposals included the retention, but tightening, of allowances for reuse of previously constructed building modules and sub-assemblies as part of new buildings (the provision of a new building on a new site). This allowance recognises both the common manufacturing base for UK subassemblies and the benefits of reuse of existing sub-assemblies offers in embodied energy savings.

The reduced scope of application and limiting easement to 'limited life' buildings the last change point in the energy standards (2015 standards) was considered to strike an appropriate balance between reuse of better performing existing stock elements and the expectation of improved performance across both our newbuild and existing building stock and enable provision of small buildings quickly in distress situations.

Response – Question 18:

Consultation proposals will be implemented as proposed, limiting allowances for new modular building to reuse of existing modules constructed to the minimum standards expected from 2015 Scottish standards, with an equivalent adjustment to the overall building performance targets.

Consultation section 3 – All Buildings

Question 20 - Introduction of the term 'Major Renovation'

Consultation proposed the introduction of a new 'defined term' for works which constitute a 'major renovation, with the intent that work of such a defined nature be set as a trigger for consequential improvement to a building. The improvement identified was the provision of EV charge points or infrastructure (as set out in section 7 of the consultation).

At present, there are no plans to use such a definition to trigger broader improvement actions beyond the scope of work intended by a building owner, but the consultation noted that likely future intent.

Response – Question 20:

There was strong support for the proposed definition. As work to take forward EV change points and infrastructure is being progressed by Transport Scotland to a 2023 delivery timetable, it is proposed that no action to implement this definition is taken at this time.

Question 21 - Minimum Domestic building fabric standards

The consultation set out proposals for amended minimum area-weighted U-values for domestic buildings for each of the consultation options and also sought views on the application of a single set of values to all new work – newbuild, extensions alterations and conversions.

For Option 1 'improved' these were set at a level which represented the best current half of construction; for Option 2 'advanced', representing the best third of current newbuild.

Response – Question 21:

There was strong support for the proposed changes. We will Implement area-weighted backstop values as set out in the 2021 consultation, for the Option 1 'Improved' proposal, noting adjustment to rooflights (U=1.9 to U=2.1).

We will review guidance to clause 6.2.1 to promote awareness of the 'total heat loss' option. This approach enables specification of elements which do exceed the maximum area weighted values (concern on limiting values expressed by some respondents) but keeps the overall heat demand the same.

We will retain Window Energy Ratings as an option for existing buildings.

Question 22 - Minimum Non-domestic building fabric standards

As with domestic buildings, the consultation set out proposals for amended minimum area-weighted U-values for non-domestic buildings for each of the consultation options and also sought views on the application of a single set of values to all new work – newbuild, extensions alterations and conversions.

Noting that there was not as detailed an information set to inform the setting of these values as was available for domestic construction. Space heating demand was not as predominant an element in overall energy demand across the spectrum of non-domestic buildings. This is reflected in the level at which proposals were set.

Response – Question 22:

Again, there was strong support for improved minimum standards. We will Implement area-weighted backstop values between those set out in the 2021 consultation for Option 1 'medium' and Option 2 'high', walls and roofs

partially improved, floors and windows as Option 1, noting an adjustment to rooflight values (to U=2.2).

We will recognise Window Energy Ratings as an option for existing buildings (where window units rather than glazing systems are present).

Question 23 - Standardising Fabric Values across works types

The consultation proposed standardisation of values for building fabric across conversions, extensions and for shell buildings. Again noting that, as levels of specification increase, it becomes more difficult to justify the application of a greater or lesser value in a given situation as the palette of options for all construction is reduced.

Response – Question 23:

There was strong support for standardised minimum values. We will apply the 'single value' approach to work to existing buildings, noting that further action on what is 'reasonably practicable' is required to support effective compliance where converting buildings. Similarly, advice on the benefits of a robust fabric specification for shell buildings to mitigate later risks of challenges to a fit-out specification should be provided.

We will offer supporting guidance, updated to reference action pending as part of the Heat in Buildings Strategy Retrofit regulations (as these are progressed). To offer assurance that those considering building work are aware of other additional responsibilities, applicable or pending.

Question 24 - Presentation of Building Services information

Recognising a change in approach to the provision of compliance information on building services in other administrations, the consultation sought views on whether the current BSD Building Services Compliance Guides should be retained, incorporated into the Technical Handbooks (within relevant standards or as annexes), or another option.

Response – Question 24:

We note the preference for reintegration of guidance under relevant standards. At this time, we will postpone any review of formatting and location of the Building Services compliance guides (for 2022) and consider change as part of ongoing review (and testing) of publication of our core publications. This forms part of the 'Technical Strategy' workstream under the Futures Board.

Question 25 – Domestic Building Services - minimum standards

Consultation noted the intent to maintain parity of minimum standards for building services with the rest of the UK, as has been the case in previous reviews. A summary of key changes on matters such as heat generator and system efficiencies

was provided which was drawn from the work undertaken by DLUHC for the review of Part L1.

New elements included emphasis on the need for clear information on system design and sizing (based upon lower distribution temperatures for wet systems), avoiding emission increase from replacement of heat generators, earlier information on commissioning plans and minor consequential improvement to controls when replacing heat generators.

Response – Question 25:

We will continue with intent to align provisions, identifying difference only where this has been clearly evidenced as justified. A note will be appended to the published document to confirm any such differences.

Question 26 - Non-domestic Building Services - minimum standards

As with domestic buildings, consultation noted the intent to maintain parity of minimum standards for building services with the rest of the UK, as has been the case in previous reviews. Again, a summary of key changes was provided which was drawn from the work undertaken by DLUHC for the review of Part L2.

New elements included emphasis on the need for clear information on system design and sizing (based upon lower distribution temperatures for wet systems), removal of 'heating efficiency credits', emphasis on heat recovery in supply/extract solutions, improved lighting efficacy and introduction of Building Automation and Control Systems for larger heat installations.

Response – Question 26:

We will continue with intent to align provisions, identifying differences only where this has been clearly evidenced as justified. A note will be appended to the published document to confirm any such differences.

Question 27 - Non-domestic Building Services - heating efficiency credits

A component of alignment of the Non-domestic Compliance Guide was the intent to remove heating efficiency credits – on the basis that improvement in heat generators makes the need for credits unnecessary, noting that such elements should form part of typical installations of heat solutions as good practice.

Response – Question 27:

We will continue with the intent to align provisions, removing the option for heating efficiency credits. To do otherwise would enable a lesser base provision of heating performance and remove potential benefits achieved from further good practice specification of control sets, etc.

Question 28 - Distribution temperature for wet heating systems

The consultation proposed the limiting of distribution temperatures to make installation more suited to the efficient application of 'zero direct emissions' heat sources, particularly heat pumps and heat connections.

This being seen as particularly important in advance of proposed regulation to remove at-building combustion solutions from the newbuild mix from 2024.

Response – Question 28:

The proposal was widely supported. We will take forward as planned, emphasising this relates to the design of the heat distribution system using standard heat output characteristics. Noting that reference to mean water temperature (MWT) is an acceptable metric but that this should be set at 50 ºC to reflect the assumption of a typical operating temperature of ZDE heat sources of 55 ºC.

We will also seek to apply these provisions to systems where the heat generator and more than 50% of a heat distribution system is replaced as part of planned works.

Question 29 - Building Services - Self-regulating devices

In response to provisions introduced by the 2018 amendment of the Energy performance of Buildings Directive, consultation propose to extend the provision of self-regulating devices to include installation (where absent) at the point a heat generator is replaced. Detailed proposals, including notes on feasibility and control at a room/zone level, were set out in the revised Building Services Compliance Guides.

This was seen as a small and simple consequential improvement to improve the controllability of heating systems which are not already fully specified with emitter, room or zone temperature controls.

Response – Question 29:

We will take forward as planned, reinforcing the need for assessment of the existing heating system to give assurance that devices can function correctly and advice is provided to the occupants on their operation.

Question 30 - Building Automation & Control Systems

A further consultation proposal, flowing from the 2018 amendment of the Energy Performance of Buildings Directive, was for the installation of Building Automation & Control Systems in new non-domestic buildings which have a heating system or systems for combined space heating and ventilation (with or without air-conditioning) with an effective rated output over 290 kW. Views were sought on the proposal in principle and on the threshold for application.

Response – Question 30:

We will take forward as planned, reinforcing the need for installed systems to be supported with clear and simple advice to support onward use. No change in the cited output rating is proposed (noting Part L in England has reduced this value).

Consultation section 4 – Ventilation

Question 32 - Revision & expansion of core ventilation guidance

Consultation proposed the expansion of basic information within guidance on the need to assess and select ventilations solutions to reflect the intended levels of infiltration through building fabric. Additional guidance describing minimum ventilation rates, based upon a default minimum per square metre and a value assignable per apartment. Incorporate the separate 'Domestic Ventilation Guide' into the Domestic Technical Handbook as an Annex to Section 3 (environment).

Response – Question 32:

There was very strong support for this proposal. We will progress proposals as planned, noting commentary and correction needed to consultation proposals (e.g. continuous ventilation rates table).

Question 33 - Revision of guidance on purge ventilation

Consultation proposals included specific reference to purge ventilation as one of the key purposes of openable ventilators and an adjustment of the minimum openable areas to align practice with other UK administrations – amending provision from 1/30th floor area of apartments to 1/20th.

Response – Question 33:

There was strong support for such additional guidance and alignment with other administrations. We will progress as planned, expand advice on specification choices and on use of mechanical systems as part of purge facility.

Question 34 - Clarification on solutions in low infiltration new dwellings

Clear advice that that intermittent extract and background ventilation was unlikely to be suitable for most new homes and that continuous extract systems should be whole-dwelling solutions (this was not explicit in 2015 guidance).

Action – Question 34:

We will progress changes as proposed, following review of advice on specification choices and selection of mechanical systems.

Question 35 - Background ventilators for continuous mechanical extract

The proposal within the consultation is simply to align a more moderate background ventilation provision for whole dwelling dMEV/cMEV with the rest of the UK. Views were sought on this alignment and any specific further concerns.

Response – Question 35:

There was strong support for this clarification and for alignment. We will progress proposal, amending standard ventilator size from 5,000 mm² to 4,000 mm².

Question 36 - Ventilation solutions in very low infiltration new dwellings

Consultation proposed the use of mechanical supply and extract ventilation systems in very low infiltration dwellings (those below 3 m³). Such dwellings are currently a small proportion of new homes completions. Views were sought on whether solutions without a mechanical supply component should be considered for very low infiltration situations and also whether heat recovery should be made an integral part of installed mechanical supply and extract solutions.

It should be noted that commentary provided by respondents indicates that the reference to 'continuous mechanical extract' may have been read as 'continuous mechanical supply and extract'.

Response – Question 36:

We will retain reference to mechanical supply and extract solutions as the recommended approach for very low infiltration buildings.

We will not 'mandate' heat recovery in all situations (this is addressed in the separate building services compliance guides) but emphasise the benefit and commonality of inclusion in combined supply/extract units.

Question 37 – Incorporate secondary Ventilation guidance into the Handbook

This is partially reported on already under Question 32.

Response – Question 37:

There was strong support to integrate this guide into the Technical Handbook. We will progress as planned. Following review of text to consider issues flagged.

Question 38 - Emphasis on design, commissioning and testing of ventilation.

Readers of the consultation were referred to Section 6 to 8 of the updated Domestic Ventilation Guide and related text in clause 3.4.7. This set out expectation on the commissioning and testing of installed components of ventilations systems. To support onward review in the context of the proposed 'Compliance Plan' approach, comments were sought on other aspects of commissioning and testing which would assist in greater assurance of performance in practice.

Response – Question 38:

There was support from those who responded to this question to strengthen commissioning procedures to support better performance. We will progress this agenda. Points noted for consideration as part of onward review.

Consultation Section 5 – Overheating

Question 41 – Overheating, scope of application

Section 5 of the consultation document introduced proposals for overheating risk assessment in new homes and similar residential buildings against the anticipation of rising summer temperatures over coming decades. The consultation asked whether the new proposal was supported and if such provisions should be limited to dwellings and similar types of non-domestic residential building, or if it should be extended to other, managed residential environments.

Recommendation: Implement extents of proposal as consulted upon (at this time). At this stage, provisions will not be extended to other non-domestic residential building types offering managed environments.

Question 42 – Overheating, application of criteria for assessment

The proposed assessment method looks at the extents and orientation of glazing to a dwelling/unit as the main indicator of risk of heat gain and the availability of openable ventilators on elevations as an indicator of capacity for heat removal. With assessment triggered regardless of geographic location of a building. The consultation asked if this approach was considered appropriate and also if further good practice on overheating mitigation might be citable.

Response – Question 42:

There was strong support for the initial proposal and the focus on solar gain and heat removal. We will implement extents of proposal as consulted upon and consider further review or enhancement as part of onward work.

Question 43 – Overheating, building characteristics to trigger use of TM59

Consultation noted that there were both a simplified and a more detailed approach to overheating risk assessment, the latter being through the application of CIBSE TM59 and dynamic thermal modelling. Respondents were asked if there were circumstances where the latter should be required, removing the simple elemental approach.

Response – Question 43:

There was support for situations where more detailed assessment should be applied. We will implement options as consulted upon. Given the option for modelling is identified, there is not a strong case to mandate TM59. Rather it can be adopted where needed or where seen as useful by the applicant.

Question 44 – Overheating, scope of simple mitigating measures proposed

The consultation document summarised the measures proposed to mitigate summer overheating risk. Noting assessment of glazed areas on 'risk' elevations and the provision of adequate purge ventilation to remove accrued heat, based upon the potential for cross-ventilation in a dwelling/unit. Views were sought on whether this approach was seen as appropriate to address the level of risk identified in the accompanying research paper.

Response – Question 44:

We will progress as planned with an amended approach to define glazed areas rather than apertures. We will review ventilation provision for heat removal in single/adjacent aspect units to determine if justified.

Question 45 – Overheating and practicality of solutions

Draft guidance set out our views on how the practicality of solutions to mitigate overheating risk should be considered, with a focus on the provision of purge ventilation. The issues raised – noise, security, ingress of pollutants – are not unique to this new topic. Such environmental hazards/nuisances already need to be assessed as part of any development.

Response – Question 45:

We will progress as planned, without additional prescription. Opening of windows is already a provision addressed by building regulations and this review simply identifies an additional, ancillary purpose which can be considered at an early stage in development.

Consultation Section 6 – Compliance

Questions 47-50 - Improving and Demonstrating Compliance

The purpose of this section of the consultation was to seek discussion on the proposal to set out a more detailed and evidence-led approach to the design and construction of the energy-relevant characteristics of buildings. To support both improved compliance and provide more assurance that intended performance would be achieved in practice.

To inform action to improve the energy and environmental outcomes of construction work, our consultation sought views on four topics:

- Consultee experience of the successful application of design/construction assurance regimes;
- Commentary on key themes though most relevant to improving compliance in energy and environmental matters;
- Aspects of design and construction which should be prioritised in the development of a 'compliance manual'; and
- Any broader comments or observations on the proposals set out.

Actions - Questions 47-50:

The following actions are identified to take forward:

- **To note that this aspect of the review is an ongoing and important piece of work. Limited changes made within the 2022 Technical Handbooks are only the start of further action to improve compliance and assurance.**
- **We will implement revised standards and guidance with stronger emphasis on commissioning and provision of written information.**
- **We will take advantage of ongoing development of compliance reporting within SAP & SBEM tools – noting there is a specific action in relation to SAP 10 tools ongoing.**
- **We will develop the output of our compliance Workstream being facilitated by Built Environment: Smarter Transformation (BE:ST) through their engagement and reporting work for summer 2022. This will support proposals to develop an energy 'compliance manual' in the context of broader compliance plan work.**

Next steps

A separate response covering 'Part 7 – Electric Vehicle Charging Infrastructure' will be published, noting how proposals will be taken forward. This will be available via the Consultation webpage.

Changes to energy and environmental standard detailed above will now be published within the 2022 Building Standards Technical Handbooks and will be applied to new buildings and new building work **from 1 December 2022** (now deferred from 1 October 2022 to allow more time for delivery of SAP/SBEM software tools).

Activity from June 2022 will focus on the development of supporting (SAP/SBEM) calculation tools and a series of dissemination events to promote awareness of these changes.

Building Standards Division

June 2022