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**RESPONSE TO SCOTTISH GOVERNMENT CONSULTATION ON
REVIEW OF THE BUILDING (SCOTLAND) REGULATIONS 2004:
TECHNICAL HANDBOOKS - SECTION 6: ENERGY**

12 April 2013

Review of The Building (Scotland) Regulations 2004 and accompanying standards and guidance for Section 6: Energy of the Technical Handbooks - 14 January 2013

CONSULTATION QUESTIONS

Consultation questions are arranged in three sections:

- Section 1: General
- Section 2: Domestic
- Section 3: Non-domestic

Consultees are encouraged to submit their views in electronic format. To mark a 'yes/no' box, please double click on the relevant box and select 'checked'.

Please feel free to provide your views and comments on this form and return the completed document to: buildingstandards@scotland.gsi.gov.uk. Alternatively, your response may be completed and posted to:

Michelle Williamson
Building Standards
Denholm House
Almondvale Business Park
Livingston
EH54 6GA

Section 1: General

Question 1: general comments on consultation proposals

Whilst specific questions are posed on proposals for Domestic and Non-domestic buildings within sections 2 & 3 of this document, Consultees are encouraged to offer commentary on any aspect of the consultation proposals in the text box below.

Comments:

Homes for Scotland is the voice of the home building industry in Scotland. With a membership of 180 organisations together providing 95% of all new homes built for sale in Scotland each year as well as a significant proportion of affordable housing, we are committed to improving living in Scotland by providing this and future generations with warm, sustainable homes in places people want to live.

While housing need in Scotland is growing, with National Records of Scotland forecasting that to meet population growth and household formation 450,000 new homes are required between now and 2033, the supply of new homes has dropped with housing output at its lowest level since 1947. This does not account for the

existing need which is accounted for with the near 200,000 households on council waiting lists. In 2011, only 15,000 new homes were completed across all tenures and the forecasts for 2012 suggest little change on this.

Adding more onto the costs of building a home will push output back even further. It will negatively impact upon jobs, the economy, jeopardise some businesses and exacerbate the housing crisis.

We call for a halt to this and all new regulations until the Sullivan Panel has reconvened and published its findings.

Sullivan 2007

In 2007 the Sullivan report 'A Low Carbon Building Standards Strategy for Scotland' set out a route map for the application of new Building Standards all with a view to addressing Scotland's climate change agenda.

It suggested rapid change and ambitious targets and acknowledged the significant impact additional costs would have on the delivery of housing.

The report set out timescales to reach net zero carbon buildings in 2016/17 **if practical** with step changes in 2010 and 2013 (from that current in 2007).

The timing of the proposed step changes in standards and the impact of the associated costs were established at a moment in time when the economy and the home building industry were in a healthy state. Had those conditions prevailed it may have been possible to deliver as intended but even then, with the then healthy state of the economy, it was recognised to be challenging.

Reconvening of the Sullivan Panel

With the clear link between the first Sullivan Report and the proposals for higher energy standards that followed, Homes for Scotland welcomes the reconvening of the Sullivan Panel. Much has happened since the original report was produced. Not just in economic terms but also in advances in technology, research and design. It is fit and proper that five years on we stop and take stock of factors that now apply.

The home building industry remains fully supportive of the low carbon and low energy agenda but is urging the Scottish Government not to make any decisions until the reconvened Panel considers the overall targets and their timings.

Homes for Scotland would suggest that whilst the Scottish Government has timescales to meet with regards to carbon reduction targets, those which would be achieved through the proposed new standards from 2013/14 to a record low housing output is at its best minimal. In fact we have calculated, from abatement figures contained in the report on Proposals & Policies up to 2022, that the energy standard proposals currently being consulted on will only make a contribution of 0.07% to the Scottish Government's overall climate change target. Such negligible benefit simply does not justify the cost or wider risk. Furthermore, the more a home costs to build, the less building will be done and therefore the assumed carbon savings for Scotland will be diminished even further.

With this in mind we argue that there is time to reassess the way forward and target the best overall strategy for the future of home building in Scotland. In doing so, the reconvened panel must consider the following:

Energy Performance of Buildings Directive

[Directive 2010/31/EU](#) (EPBD recast) Article 9 requires that “*Member States shall ensure that by 31 December 2020 all new buildings are nearly zero-energy buildings; and after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings*”. Member States shall furthermore “*draw up national plans for increasing the number of nearly zero-energy buildings*” and “*following the leading example of the public sector, develop policies and take measures such as the setting of targets in order to stimulate the transformation of buildings that are refurbished into nearly zero-energy buildings*”.

A nearly zero-energy building is defined in Article 2 of the EPBD recast as “*a building that has a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby*”.

We would ask the Sullivan Panel to take account of the European target in setting an appropriate route map for Scotland. With the changes to the economic climate drastically slowing production and with no sign of an upturn, 2016 seems far from appropriate for standards which enforce ‘net zero carbon’ (if that definition remains appropriate). At this point we would remind the Scottish Government of Sullivan’s consistent use of ‘if practical’ when referring to the pursuit of net zero carbon homes. The good news is with the European target in place for 4 years later we have time to put the correct route in place.

Economic growth –

The review must take account of the impact of increased costs on economic regeneration and housing supply. An overall wider appraisal is required involving not only representatives from Building Standards and Climate Change but with representation from Housing and experts in economic regeneration. To measure the impact on the industry solely by capital costs is simply inaccurate and myopic.

Future investment in Scotland must also be considered in light of the number of home builders that operate both north and south of the border. With the Westminster Government making it clear that they recognise that the complexity, cost and the wide range of regulations has a major impact on housing delivery. A ‘one in, two out’ regulatory regime could make England a far cheaper place to invest and our PLC home builder members are already finding it increasingly difficult to defend proportionate spending budgets in Scotland.

We are pleased to contribute to the Minister’s ‘de-regulation’ exercise to establish whether there are any outdated or redundant parts of the Building Standards technical handbooks that could be removed to try and mitigate future changes in relation to energy. The extent to which this will assist the industry is yet to be established but for this to truly have an impact we would be seeking comparable

mitigation.

House Valuations –

House prices generally have fallen and are predicted to be flat over a period of years to come. Additional construction costs cannot be covered by an increase in the sales value of a home. Valuation premiums for 'green' credentials currently do not exist. We would therefore like the Sullivan Panel to consider how financial market transformation can be delivered within the route map for increased standards. This should include stimulus through financial incentives such as discounts on Stamp Duty (or Land and Buildings Transaction Tax as it will become) or council tax.

Viability –

The impact that step changes in building standards has on land values and site viability must be considered by the Panel. The impact will be to both new land supply and with taking forward existing land holdings. Due to the length of time it takes to deliver development from start to finish, there is no way of planning what the costs of delivery actually are. During the lifespan of a project, building standards are likely to change once if not twice. For this reason it is impossible to predict and programme the development costs into the financial appraisal. This is why the timing of the publication of new standards is crucial. Without certainty of the costs for delivery, the banks will simply refuse to provide funding, thereby further diminishing housing supply. Research on land supply and/or specific sites would greatly assist the understanding of this for the Sullivan Panel.

Allowable Solutions: The Retrofit Reward –

The Panel should consider whether the standards should be flexible and make provision for allowable solutions i.e. flexibility in how the targets are met. HFS has proposed that home builders should be given the choice to work towards a higher level of efficiency if they felt it was achievable within their business plans or continue to deliver to the existing 2010 building standards and make a financial contribution to be used for the retrofitting of existing homes. The resulting fund would be used to dramatically accelerate carbon emission reduction through retrofit activities across Scotland and deliver a much greater carbon reduction for every £ spent.

Carbon Vs Energy -

Most other European companies use energy as an indicator as opposed to carbon. Should this not be the case for Scotland? Customers simply do not understand 'carbon' and how it impacts their lives, what they are more likely to understand is the benefits of low 'energy'. We would suggest that the Panel considers this.

Customer lifestyles/behaviour -

Behaviour change is undoubtedly key to reducing carbon emissions from any home. The behaviour of a customer cannot be controlled through building standards, what standards do unfortunately achieve is the removal of choice for a customer. By forcing the industry to build to consistently high standards, is the

market being distorted and will customers prefer to buy what they know and understand – a product which will soon only be available in the second hand market? There is strong link here with the reference to valuations above, in terms of what customers would be willing to pay for energy efficiency.

In the original Sullivan Report a statement from a European member of the panel is cited in relation to tightened air permeability and U-values for building fabric: *“You could not impose ‘PassivHause’ living habits on home owners and occupiers. The main issue associated with ‘PassivHause’ is that to realise the enhanced energy performance and to avoid mould growth arising from condensation, the occupants must be prepared to adjust their lifestyles to rely solely on mechanical ventilation with heat recovery (MVHR), including frequent changes of filters and the associated running costs. In his country there was significant subsidy for those who elected to build and occupy such houses, but most importantly these people had made the decision themselves and had not been forced to live this way through regulation.”*

Health –

Following on from customer lifestyles/behaviour, any health risks to households caused by the building of more air tight homes must be considered. There is increasing evidence of over-heating, mould growth and health risks as an unintended consequence of air-tight and highly insulated homes. The home building industry prides itself in the product delivered and cannot risk being forced to deliver a home which does not perform well for the customer.

In addition to the above items for consideration within the Panel agenda, having now received a formal invitation for Homes for Scotland’s Chief Executive Philip Hogg to participate in the reconvened Panel, we would like to make the following practical recommendations:

Membership of Sullivan Panel

We understand that although membership of the panel this time around will not be identical, that you are trying to achieve a ‘like for like’ composition with a balance between energy experts and those responsible for designing and constructing buildings in Scotland. Although valuing the consistency in approach that this would offer we would suggest that the importance of economic growth to Scottish Government warrants additional representation from private industry, whether that be from home building companies directly or through specialists in economic regeneration.

Timeframe for Sullivan Review –

With all the issues above in mind, it is clear that we see the Sullivan Panel review as extremely important. We note from the invitation received that the reconvened panel will meet only once for a duration equal to one working day. We would suggest that a fuller timetable of dates be put in place for the Panel to undertake a thorough review. The home building industry is too important to the economic recovery of Scotland to have its long term future decided in a matter of hours.

Areas for Review –

Whilst we agree that the 'Eventual and Staged Standards' and Section 6 on 'Process' are key areas for review, we would suggest that it is impossible to agree a balanced route map and process without taking account of the issues outlined above. We think it would be appropriate for the Sullivan Panel to use the session planned in May to agree what factors and supporting research/evidence must be accounted for in setting a realistic and achievable set of staged standards and supporting processes for Scotland. For example, the lead in time required in bringing forward development and the true impact this has on development viability will need to be understood to reach agreement on the advanced publication of standards and building warrant process.

Proposals for 2013/14

Homes for Scotland welcomes the recent proposals by the Scottish Government to reduce the extent of the step change that was originally proposed for 2013. However, according to Scottish Government's own research, the proposed 45% reduction on 2007 standards still has the potential to add up to £10k on the cost of building a home and this additional burden has the potential to cripple output and add risk to some SME builders.

The paragraphs above demonstrate our commitment to the reconvening of the Sullivan Panel. We believe that is the best approach to get the strategy right for Scotland. For this reason we would urge the Scottish Government not to make any decisions on the 2013/14 change until the Panel has met and their findings are published. It makes no sense at all to push forward with a decision on a change for 2013/14 when a fundamental review on Building Standards relating to energy is about to take place.

We should also remind the Scottish Government that the issue of timing of introduction of any change remains key. This is for two reasons – both of which are extremely important for the planning and design of viable housing sites:

- 1) The original Sullivan Report made it quite clear that the industry was to be made aware of the forthcoming standards 3 years in advance of introduction and this has not happened. The importance of this is explained under the viability heading above.
- 2) Once the decision is made on the level of change the approved SAP software (the method of assessing compliance with the Section 6 standards) needs to be developed. This process, from past experience, can take around 12 months. At the last change i.e. the introduction of the 2010 Standards the approved software was not available until 10 months after the introduction date of the new standards. This is completely unacceptable and the introduction of any new standards should be delayed until at least 6 months after SAP software has been approved for use. This would allow home builders time to investigate how best to comply and make the necessary changes to house types for submission under the new standards.

Considering the View of others

The ambitious climate change targets set in Scotland have a number of strong supporters. We understand that it's difficult for Scottish Government to balance agendas, particularly when targets have been celebrated so publicly. The central focus of Scottish Government is to increase sustainable economic growth and we need to be clear that we have serious concerns that the climate change agenda is being pushed forward at the expense of the growth of an industry which prior to the downturn contributed £6 billion to the Scottish economy annually.

The following addresses a number of views raised by others:

“The economies of scale will benefit all” –

It has been claimed that pushing forward with zero carbon new build by 2016/17 would help stimulate new approaches and techniques, create a mass market and bring down costs. We are not convinced that the desirable economies of scale will be achieved and this should not be relied on as a reason to increase standards. Referring back to the 2007 Sullivan Report *“There is an assumption that economies of scale will inevitably lower the initial costs of innovative products and demonstration projects, as for electronic products. However we suggest this assumption may not be valid for construction products, building systems or construction techniques”*.

“Not building to higher standards now is just going to cause more expense later” –

It has been claimed that it will be more difficult and expensive to retrofit homes later, but with new homes built to today's standards already 70% more energy efficient than they were in 1990, we would question how much retrofitting will actually be required. Retrofit options leave the house holder to decide whether they want to make changes to the home that they, or the market, at that point in time values. They can also make changes at a time that they can afford it rather than further diminishing affordability at a time when mortgage finance is difficult to access. The successful retrofitting that has been undertaken in homes across the country also demonstrates that the retrofitting or upgrading of homes can be carried out fairly easily, and as skills increase through experience the ease of upgrade can only improve.

“The industry should stop ‘dithering’...they are creating uncertainty” –

No-one appreciates certainty more than the home building industry. The lead in time in planning and taking development forward is significantly longer than that of other industries and home builders need to know where they stand to make viable business decisions when bringing forward development. We do not believe it makes any sense to make any decisions until the Sullivan Panel has met and published its findings. Until then the 2010 standards will remain in place, therefore no uncertainty has been generated as a result. We want a solution that is well thought through rather than introduced as a knee-jerk or simply to ensure some continuity of an outdated route-map.

Summary

Given the risk that any increase in building standards could have on already low levels of housing output, the competitive disadvantage which building in Scotland could offer and the list of crucial issues identified above for the reconvened Panel to consider, we urge the Scottish Government not to make any decisions until a properly timetabled and resourced Sullivan Panel has published its findings.

While we are about to comment on the technical aspects of this consultation, we wish to re-emphasise that we see absolutely no reason not to wait and incorporate the findings of this consultation into the wider review which is about to take place.

Section 2: Domestic

Standard 6.1 – Inclusion of low carbon equipment for the electricity and biomass fuel packages.

In setting the Target Emission Rate to achieve a 21.4% reduction in carbon dioxide emissions, when compared to current standards (equivalent to a 45% reduction on 2007 energy standards), solar water heating has been removed from all fuel packages and photovoltaic panels (PVs) included in the gas, LPG and oil packages. No further low carbon equipment has been added to the electricity and biomass packages as the primary heating appliance is a renewable technology.

Question 2: inclusion of low carbon equipment for the electricity and biomass fuel packages.

Do consultees agree with this approach?

If not, please provide details of the concerns you have.

Comments:

This offers one way for home builders to comply with the draft proposals for a 45% reduction on 2007 standards. In some ways it is a muted point because, whatever the energy standards, home builders are likely to do their own SAP calculations to work out what can be done anyway. What our members do not wish to see when standards are introduced is any restriction on choice in the way a home builder meets the energy targets. For example we would not want to see home builders forced down the PV route. We should also remind Scottish Government at this point that reliable SAP Assessment Software should be ready for home builders use at least 6 months ahead of the introduction of any new standards.

Standard 6.1 – addition of PV in place of solar water heating for gas, LPG and oil fuel packages.

The setting of the Target Emissions Rate now incorporates photovoltaic panels (PVs), recognising the need to promote a reduction in energy demand and that this is now the most mature and readily applicable form of low carbon equipment. The PV kWp in the proposed guidance is based on the dwelling floor area and is also constrained to 50% of the available roof area, taking account of the greater contribution to reduce TER in larger dwellings, where the number of occupants will generally result in greater energy demand.

Question 3: addition of PV in place of solar water heating for gas, LPG and oil fuel packages.

Do consultees agree that for the purposes of calculating the Target Emission Rate (TER), PV kWp should be calculated based on the dwelling floor area?

If not, please provide details of the concerns you have and details of how this might be calculated when setting the TER.

Comments:

Again we would not wish to see any restriction on flexibility in the way home builders achieve a reduction in energy use. Flexibility is required to suit different house types. For example a townhouse will have a large floor area but a small roof. Care must be taken about what a PV does to the form a house i.e. gable front to back.

Standard 6.1 – Introduction of waste water heat recovery systems for all fuel packages.

The Target Emissions Rate now incorporates waste water heat recovery (WWHR) technology, recognising the need to promote reduction in energy demand for hot water. For consultation purposes, the number of units incorporated is based on dwelling floor area; dwellings with a floor area greater than 100m² have 2 WWHR units and 1 unit is applied to smaller dwellings. This approach takes account of the greater contribution to reduce TER in larger dwellings, where the number of occupants will generally result in greater hot water demand.

Question 4: introduction of waste water heat recovery systems for all fuel packages.

Do consultees agree that for the purposes of calculating the Target Emission Rate (TER), the number of WWHR units should be based on dwelling area? If not, please provide details of the concerns you have and details of how this might be calculated when setting the TER.

Comments:

Our members believe this to be the wrong approach. Concerns include:

WWHR units are predominantly designed for two storey dwellings. Single storey properties cannot achieve similar efficiency benefits and will therefore be disadvantaged. This will also further disadvantage rural development with the predominance of single storey properties.

The calculation of WWHR is also wholly dependent on shower usage, and should not be linked to floor area.

The change in method of installation may distort the market for such products.

Standard 6.1 – Minimum efficiency for air source heat pumps in fuel package table.

The Target Emissions Rate for the electricity fuel package is based on an air source heat pump with a Seasonal Performance Factor (SPF) of 250%. It is proposed that where measured heat pump data is not available and generic heat pump values are being used then a default Seasonal Performance Factor (SPF) of 230% is used, the proposed default efficiency in SAP 2012. This is to avoid heat pumps, where measured data is not available, assuming a higher efficiency.

Question 5: minimum efficiency for air source heat pumps in fuel package table.

Do consultees agree with this approach? If not, please provide details of the concerns you have and details of an alternative approach.

Comments:

Our members would not support any restrictions on the use of particular technologies. This approach would risk alienating sectors. In some ways it is irrelevant to home builders given that they will use their own SAP calculations anyway.

Standard 6.1 and 6.2 – Improvement to U-values

U-values have been improved throughout guidance (except for floors in the fuel package table, conversion of heated buildings and for 'standard' extensions). In improving U-values, it is proposed that the variation in U-values is simplified. Area-weighted average U-values for the 'improved' extension now align with target U-values used for the 'notional' dwelling and area-weighted average U-values for a 'standard' extension now align with maximum U-values for new dwellings.

Question 6: improvement to U-values

Do consultees agree with this approach?

If not, please provide details of the concerns you have in respect of improvement to U-values.

Comments:

6.1 offers an elemental approach to achieve the standards, one way of complying with the standards i.e. if home builders do all of the above a SAP calculation would not be required because a target energy rating for a notional dwelling will have been achieved. This is helpful as one option for home builders as long as there is no restriction placed on other ways of achieving the reduction.

A decrease in U-values in walls and openings will have an impact on build costs. Improvements in U-values may offer a cost efficient solution but it reduces flexibility for home builders. Again we do not want to see anything in the standards which reduces choice for home builders in the way the energy targets are met.

It should also be noted that a reduction in U-values will make the construction of suspended timber floors very difficult to achieve thus creating construction issues for steeply sloping sites. The current back stop figure should be retained to allow continued use of timber suspended floors. This may lead to an increased use of concrete floors which have an inherently greater carbon footprint.

Note: Item 6.2.3 in Technical Paper (page 72) – bullet points should be a,b,c & not d,e,f as shown (as page 73 refers to "for example values from b & c above)

Standard 6.2.12 – Conservatories

To deliver improved energy performance when carrying out work to existing buildings, it is proposed that performance standards for glazing within conservatories be aligned more closely to that specified for other types of extension.

Guidance proposes a revised area-weighted average U-value for glazed elements of 1.8.

Question 7: conservatories

Do consultees agree with this revision?

If not, please provide details of the concerns you have in respect of improvement in the area-weighted average U-value.

Comments:

No comment.

Standards 6.3 to 6.6 Non-domestic – specification of equipment efficiencies and controls.

Previously, recommendations on efficiency and controls for building services in guidance to standards 6.3 to 6.6 reproduce information developed for the Domestic Building Services Compliance Guide which support building regulations in England, Wales and Northern Ireland. Recommendations prepared by the Department of Communities and Local Government (DCLG) follow discussion and development with UK industry. The proposal is to directly reference this guidance document within the Technical Handbooks, retaining existing guidance only where not addressed in that document or where guidance specific to Scotland is required.

Question 8: specification of equipment efficiencies and controls.

Do consultees agree that the Domestic Building Services Compliance Guide should form the guidance for compliance with standards 6.3 to 6.6?

If not, please provide details of the concerns you have.

Comments:

Our members find it difficult to answer this question. The Scottish Gov needs to clarify what parts apply and what parts do not so it is clear which parts would be taken out.

Feedback from members operating south of the border suggests that the DCLG guide is generally not well known or used.

Homes for Scotland would be happy to work with BSD on this to establish i.e. whether 'guidance' would be helpful, how we could ensure its ongoing relevance and how performance under the guidance could be monitored.

Standards 6.3 to 6.6 Domestic – fixed independent space heating appliances.

The Domestic Building Services Compliance Guide includes guidance on fixed independent space heating appliances, including minimum efficiencies.

Question 9: fixed independent space heating appliances.

Do consultees agree that guidance on fixed independent heating appliances is adopted in Scotland?

If not, please provide details of the concerns you have in respect of the introduction of guidance, including minimum efficiencies, on fixed independent heating appliances.

Comments:

Section 6.3.1 & 6.4.1 has a paragraph which states 'following clauses' – clarification would be helpful as to exactly what these 'following clauses' are – perhaps bullet or reference points for said clauses would assist.

Our members understand that the 'Guide to Condensing Boiler Installation Assessment Procedure for Dwellings (Scotland)' 6.3.2 includes a restriction on where a boiler can be installed (2.5 metres from a boundary). Our members are concerned that this will have a negative impact on unit layouts which will add cost and risks compromising produce design.

As with the point raised in 8 above, Homes for Scotland would be happy to work with BSD to ensure guidance is thoroughly evaluated to ensure it is appropriate for home building operations.