

**Implementing the Domestic Fire Safety (Wales) Measure 2011**

**17/6/2013**

Please find below our answers to the questions within the consultation proposals. We have also included a separate section at the end titled ‘other issues’.

**Question 1: Do you agree with the proposed approach (set out in paragraph 20) of implementing the intent of the Measure through a combination of commencing section 1 of the Measure and making changes to the Building Regulations?**

**No.**

**The overall policy objective**

We have concerns with the solution to the problems identified within the section titled ‘Overall Policy Objective’ within Section 1 of the consultation documentation. We have re-listed some of the policy objectives below for clarity.

*5. When the May 2012 statement was published, available data from the last 10 years showed that on average 17 deaths and 503 injuries per year have resulted from fires in residential properties in Wales.*

*6. The Welsh Government’s view at that time was that, notwithstanding the reduction in the number of deaths from fires in the home that had occurred over the previous last ten years, the number of deaths and injuries was still too high.*

*7. The overall policy outcome we are seeking to achieve is to reduce deaths and injuries from fire in new and converted residential premises in Wales.*

Further to the above objectives, paragraph 20 of the ‘Section 1’ consultation document states:-

*20. The proposed approach is as follows:*

*To be clear about the purpose and intent of the Measure in driving forward our commitment to preventing fire-related death and injury in the home, and to set Wales apart as a leader in this, we propose to commence Section 1 of the Measure. This will require that each residence (to which the Measure applies) must be provided with an automatic fire suppression system, that the system is operating effectively and that the fire suppression system complies with such requirements as may be prescribed by Welsh Ministers.*

The HBF understands the overall policy objective to reduce fire deaths in Wales. In this respect, we agree that this is an important issue that needs to be properly addressed. However, it appears that the solution to the overall policy objective is to address this important issue by seeking to achieve a reduction in fire deaths in new and converted dwellings only. In this respect, given that the main issue to be addressed is the number of fire deaths in Wales in general, we believe it is imperative to establish whether or not the proposed legislation will be effective in achieving this aim.

We raised this issue when we responded to the original Measure issued by Ann Jones AM. Within our response to the Measure consultation, one of our primary concerns related to the role and remit of the Measure. In this respect, the stated purpose of the Measure was to reduce the incidences of death, injury and property loss from house fires in Wales. Therefore, given that the mandate of the Measure was solely focussed on installing fire suppression systems within newly built homes, we stated it was necessary to gather evidence on the instances of fire that occurred within the older existing stock and those that occurred within newly built homes, in order to establish whether or not the type and age of the property had any bearing on the level of risk presented. In doing so, we stated it was also important to consider the method of fire protection present within a property and also the particular type of property concerned (flat, house etc), to establish whether or not these factors had any impact on risk.

In order to support this, within our response to the Legislation Committee, we provided evidence (informed by South Wales Fire and Rescue) that in South Wales, a vast majority of all deaths recorded from house fires between the years 2000 and 2009 were recorded in homes without hard-wired smoke detectors installed. In this respect, given that since 1992 the mandatory installation of hard-wired smoke detectors in all new homes in Wales has been enforced through building regulations, the evidence potentially demonstrates that the vast majority of all deaths from fire within this period came from homes built pre 1992.

In light of the above, we stated within our evidence submission that in order to ensure the Measure effectively delivers the objectives it sets out, it is imperative that more work is done to identify the main source of the problem. That is, if we cannot clearly identify whether or not it is newly built homes with improved fire safety measures installed (e.g. hard-wired smoke detectors), or the older stock without these improvements that is the main cause of the problem, it is impossible to tell whether or not the installation of fire suppression systems within all newly built homes would have the desired impact of reducing the instances of injuries or deaths from house fires in Wales, or the savings in terms of property damage and loss, as stated within the Measure.

In response to our concerns, at the first oral evidence session with regard to the Measure, Ms Jones AM indicated that she would attempt to find this information in order to address this important matter. The following transcript is taken from MS Jones’s first evidence session to the Legislation CommitteeonThursday, 23 September 2010[[1]](#footnote-1).

*[33]* ***Val Lloyd:*** *The committee has received evidence questioning whether the statistics provided in the explanatory memorandum, which relate to death and injuries from fire in all dwellings in Wales, are*

*[34] ‘sufficiently focussed to accurately assess the benefit of the proposed Measure’.*

*[35] Of the figures provided in paragraphs 3.8 and 3.9 of the explanatory memorandum, can you clarify how many of the fires occurred in newly built homes and how many were in older* *housing stock? Secondly, can you also provide details of the types of dwellings within which the fires occurred; for example, house, flat or caravan?*

*[38]* ***Ann Jones:*** *I have been unable to get hard figures but we are working on that. I will try to get some figures that break down the number of deaths and injuries in new properties, as opposed to deaths and injuries in older properties. I will try to do so during the course of your scrutiny of this proposed Measure. I do not know whether you, as a committee, could write to Communities and Local Government to ask whether the figures are easily collected, because we do not want to put an awful lot of burden on overworked staff within the fire service.*

*[39]* ***Rosemary Butler:*** *If you could find those figures, Ann, and submit them in written evidence that would be helpful. We will also make some inquiries…*

Following this, at Ms Jones’ final evidence session on the 14th October 2010 the following conversation took place on this issue.

*[8]* ***Rosemary Butler:*** *When you last gave evidence, you advised the committee that you would try to provide a breakdown of the total number of deaths and fires in homes in Wales by the age and type of property. Are you now able to provide this information?*

*[9]* ***Ann Jones:*** *Sadly, no, though it is not for the want of trying. Apparently, the data are not collated in a fashion that would make them available to the committee. I spoke to my local fire service in north Wales and said that, if it could provide me with a list of property fires over the last 10 years, I would attempt to go around and check how old the buildings were. I could do that only in Rhyl and Prestatyn, I suppose, so the exercise would easily outweigh the data.*

As the above demonstrates, this issue was recognised by the Legislative Committee but unfortunately robust evidence was never provided to answer these important questions. In light of this, we urged (and continue to urge) the Welsh Government to undertake this research, in order to ensure that any new legislation enacted would actually achieve the overall objectives it sets out.

Further to the above, it is evident from the current consultation proposals, that the Welsh Government has still not undertaken this important work. Indeed, the Impact Assessment of the preferred option (as set out within the consultation proposals) still uses the data for **total** fire deaths, injuries and property loss in order to identify how many lives might be saved and injuries prevented if sprinklers are installed in all **newly built** dwellings.

In this respect, the Impact Assessment states that there will be roughly 35 lives saved over the life of a sprinkler system and roughly 800 injuries prevented. However, given these figures are based on the **total** fire deaths and injuries in **all homes** that have occurred in Wales and the Impact Assessment is based solely on the Welsh Government’s estimates of the number of **new** homes built in the future, the evidence clearly does not distinguish between the instances of fire that occur in newly built homes and those that occur in the existing stock. As such, this does not seem to be a fair comparison, that might not only lead to a distorted picture of the potential for lives saved and injuries prevented as a result of the preferred option, but could also impact significantly on the results of the cost benefit analysis.

In order to potentially achieve the figures for lives saved and injuries prevented (as discussed within the consultation information), it would seem that sprinklers would need to be install in **all homes** in Wales, rather than just newly built homes. We raised this issue again at the Fire Sprinklers Consultation event held in Cardiff on the 7th May 2013, where the authors of the impact assessment and cost benefit analysis fully accepted our concerns and recognised that more work will need to be done on this important issue.

In order to begin to understand the significance of this issue in a little more detail, it is possible to undertake a simple calculation in order to make a broad assumption of how the figures for lives saved and injuries prevented might be affected.

In this respect, if we accept that the new build market is roughly 5% of the total housing market, and we applied that figures above on lives saved and injuries prevented, it would suggest that roughly 1 life would be saved and 25 injuries prevented. However, this calculation still assumes that the older existing stock is equally as safe as newly built homes, which evidence suggests is not the case.

In terms of the above, this is a very rough calculation, which is by no means scientific and is certainly not meant to demean the saving of lives or the prevention of injuries in any way. Rather, we are simply making the point that the figures for lives saved and injuries prevented as provided within the consultation proposals seem to be rather inaccurate, as a result of the methodology by which they have been created. If incorrect figures are used in such assessments, this would not only distort the impact assessment and the cost benefit analysis, but might also send out a rather inaccurate message to the public on the potential impact of the proposed legislation.

In addition to the above, we have undertaken our own research on the number of deaths and injuries that have occurred as a result of house fires in Wales. To be clear, this research is based directly on information provided to us by the three Fire and Rescue Services in Wales. Through this research we have again used the presence of a hard wired smoke detector to establish whether or not a home would be a recently constructed property or part of the older existing stock. However, again to be clear, hard wired smoke detectors were made mandatory in 1992, which means the properties that benefit from these devices could still be more than 20 years old. As such, when we refer to a ‘recently constructed home’, it is important to remember that such properties could still be quite mature in comparison.

In terms of the above, according to our data, nearly 80% of all fire deaths in Mid Wales, West Wales and South Wales between the years 2002 and 2012, occurred in homes without a hard wired smoke detector. Furthermore, more than half of injuries also occurred in homes without a hard wired smoke detector in Mid, West and South Wales. Please see the tables below for more information.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Data relating to South Wales** | | | | | | |
| **YEAR** | **Deaths (hard wired smoke alarm)** | **Deaths (no hard wired smoke alarm)** | **Injuries (hard wired smoke alarm)** | **Injuries (no hard wired smoke alarm)** | **Fire related deaths in dwelling fires South Wales** | **Fire related injuries in dwelling fires South Wales** |
| 2002 | 0 | 10 | 23 | 95 | 10 | 118 |
| 2003 | 0 | 13 | 31 | 131 | 13 | 162 |
| 2004 | 4 | 4 | 29 | 87 | 8 | 116 |
| 2005 | 2 | 9 | 56 | 60 | 11 | 116 |
| 2006 | 0 | 3 | 22 | 45 | 3 | 67 |
| 2007 | 1 | 5 | 25 | 71 | 6 | 96 |
| 2008 | 2 | 7 | 42 | 32 | 9 | 74 |
| 2009 | 0 | 5 | 54 | 50 | 5 | 104 |
| 2010 | 0 | 2 | 65 | 68 | 2 | 133 |
| 2011 | 3 | 2 | 50 | 20 | 5 | 70 |
| 2012 | 5 | 1 | 47 | 45 | 6 | 92 |
| **TOTALS** | **17** | **61** | **444** | **704** | **78** | **1148** |
| **%** | **22%** | **78%** | **39%** | **61%** |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Data relating to Mid and West Wales** | | | | | | |
| **YEAR** | **Fire related deaths hard wired smoke alarm** | **Fire related deaths non-hard wired smoke alarm** | **Fire related injuries hard wired smoke alarm** | **Fire related injuries non-hard wired smoke alarm** | **Fire related deaths in dwelling fires Mid/West Wales** | **Fire related injuries in dwelling fires Mid/West Wales** |
| 2002 | 0 | 6 | 56 | 156 | 6 | 212 |
| 2003 | 2 | 6 | 81 | 135 | 8 | 216 |
| 2004 | 0 | 8 | 67 | 131 | 8 | 198 |
| 2005 | 1 | 5 | 50 | 108 | 6 | 158 |
| 2006 | 0 | 1 | 57 | 110 | 1 | 167 |
| 2007 | 0 | 5 | 75 | 69 | 5 | 144 |
| 2008 | 1 | 6 | 53 | 84 | 7 | 137 |
| 2009 | 4 | 5 | 86 | 47 | 9 | 133 |
| 2010 | 2 | 6 | 64 | 33 | 8 | 97 |
| 2011 | 4 | 2 | 104 | 22 | 6 | 126 |
| 2012 | 1 | 1 | 57 | 66 | 2 | 123 |
| **TOTALS** | **15** | **51** | **750** | **961** | **66** | **1711** |
| **%** | **23%** | **77%** | **44%** | **56%** |  |  |

In this respect, if we assume that it is unlikely anyone would remove a hard wired smoke detector from a dwelling, it is reasonable to assume that these deaths occurred in homes built pre 1992. This therefore suggests that there are significantly more deaths occurring in the older existing stock than in newly built homes. This in turn suggests that installing fire sprinklers in newly built homes only, might not reduce these instances of death and injury in future years, given that the legislation will not cover these particular dwellings. Therefore, we believe the figures quoted for lives saved and injuries prevented as a result of the preferred option should be reconsidered, to ensure they are sound and robust. We also believe this evidence somewhat contradicts the comments made within the Impact Assessment (page 6), that the Committee received evidence that the Measure would possibly ***eradicate fire deaths in Wales***. In this respect, we are yet to see any evidence from the Welsh Government to corroborate this significant statement and in light of our evidence above, we believe this seems to be a rather ill-considered commitment to offer Welsh Ministers.

In terms of North Wales, similar data is only recorded from 2010 onwards, and does not distinguish between hard wired and battery operated smoke alarms. However the figures are very similar to those witnessed in other areas of Wales. The table below sets the evidence out and demonstrates that over the period 2010 - 2012, roughly 73% of fire deaths and nearly half the total injuries occurred in properties without a smoke alarm fitted. Furthermore, as you can see from the table below, even though the percentage of fires that occurred in homes without smoke detectors was relatively small, they still accounted for the vast majority of deaths from fire that occurred over this period.

|  |  |  |  |
| --- | --- | --- | --- |
| **Data relating to North Wales** | | | |
| **Year** | **% Proportion of residential fires where no smoke alarm present** | **% Proportion of total deaths in fires with no smoke alarm** | **% Proportion of total injuries in fires with no smoke alarm** |
| 2010 | 16.33 | 88.89 | 34.62 |
| 2011 | 14.71 | 50.00 | 48.84 |
| 2012 | 15.96 | 80.00 | 61.54 |
| **TOTALS** | **15.6%** | **73%** | **49%** |

In light of the evidence above, we believe it is imperative the Welsh Government tackles the important issue of the instances of fire that occur in newly built homes versus those that occur in the older existing stock. Not only is this important to ensure the impact assessment and cost benefit analysis are based on robust evidence, but it is also critical in order to ensure the proposed legislation will achieve the aims and objectives it sets out.

Further to the above, when considering previous evidence on the instances of death and injury from fires in the home in Wales, we believe it is also important for the Welsh Government to understand the type of property in which these instances have occurred. In this respect, the purpose of this consultation is to determine the type of properties that should be covered by the sprinklers legislation. Therefore, when considering the number of deaths and injuries that have previously occurred in homes in Wales, in addition to considering the age of the property, it also is important to understand whether or not there is a certain type of property that is more prone to the risks from fire.

In light of the above, we believe it is crucial for the Welsh Government to revisit these aspects of the Measure and to undertake its own research into these matters, in order to ensure the impact assessment and the cost benefit analysis accurately reflects the potential effectiveness (or otherwise) of the stated preferred option. Again, we reiterate that the Welsh Government fully accepted that these important issues need to be addressed at the Fire Sprinklers Consultation event held in Cardiff on the 7th May 2013.

**Question 2: Do you agree with the proposed list of residences (set out in paragraphs 28 and 31) to which the regulations should apply?**

**No.**

Firstly, we believe it is important to note that the cost benefit analysis for ‘houses’ demonstrates a significant negative net present value. This would therefore seem to demonstrate that the cost of installing fire sprinklers into this type of property would outweigh the benefits. As such, we cannot understand why the ‘preferred option’ includes this dwelling type.

We also do not believe the proposed list of residences has been considered properly. Paragraph 32 of Section 1 of the consultation information lists a number of establishments that could potentially pose a risk from fire, such as short term youth hostels and residential nursing homes. These establishments are likely to house a number of vulnerable groups of varying kinds under one roof, in addition to potentially large groups of people with limited mobility. As such, we believe the measure should be reconsidered to take account of these establishments.

Also, it is not clear whether or not the instances of death and injury from fire recorded in the consultation information and subsequently included within the impact assessment, arise from any of these establishments. This, we believe, needs to be clarified to ensure the potential estimates for lives and injuries saved, as a result of the Measure, are sound and accurate.

We raised this issue at the Fire Sprinklers Consultation event held in Cardiff on the 7th May 2013, and the response we received was that because the Measure was not written to include these establishments, the WG has no remit to consider them. We do not believe this is appropriate. The Welsh Government states that this Measure arose due to a concern with deaths, injuries and property loss from fires. Indeed, throughout the consultation documentation the WG states that they believe the number of deaths and injuries from fire is still too high. In light of this, we cannot understand why the Welsh Government has chosen to ignore these establishments and their prospective risks from fire. We accept the Measure might not provide the remit to consider such buildings, however, we believe this points more towards a mistake made in the preparation of the Measure, which should be rectified, rather than a justification for the Welsh Government to take no action with respect to these establishments. In our view, a poorly written Measure should not be an excuse to ignore vital evidence. If the Measure would prove to be more effective by considering the inclusion of these establishments, it should be altered.

**Question 3: Do you agree that the guidance should refer to BS 9251 as the main standard by which the regulatory requirement can be met?**

**Yes – however…**

This would seem reasonable. However, we have a number of concerns, which are discussed in more detail below.

**BS9251 Issues – particularly water issues**

The BS states that sprinklers systems can be fed in a number of ways. I.e. by town mains, town mains with booster, or via a pump and tank. However, despite the method of water provision, the BS requires that a flow rate of 60 litres / min through a single sprinkler head or 42 litres / min for multiple heads is provided to ensure the system operates efficiently and effectively.

In terms of the above, we are concerned with how the BS is being interpreted and where the responsibility for ensuring the installation of an effectively operating sprinkler systems lies. Essentially, in certain parts of the consultation information (and by those presenting the consultation at the Fire Sprinklers Consultation event held in Cardiff on the 7th May 2013), there seems to be an assumption that because the BS allows for a number of methods of operation, any one of these methods could be considered suitable. Therefore, it seems to be suggested (particularly at the Fire Sprinklers Consultation on the 7th May 2013) that as the BS allows for a mains fed system, there will be no requirement for a system that operates via a pump and a tank (for example). However, in our view this is not the case. As we understand it, in terms of the effective operation of a sprinkler system the BS standard is clear that the pressure and flow rates will need to be guaranteed at the levels described above, and in doing so the BS states that this can be achieved either by mains, mains and pump, or pump and tank fed systems. Indeed, BS 9251 requires that when planning to use a mains water supply to feed a sprinkler system, prior to installation the minimum mains pressure and capacity should be ascertained in conjunction with the water undertaker. As such, it is clear from the BS that whatever method of water provision is used, for the system to operate effectively, a flow rate of 60 litres / min through a single sprinkler head or 42 litres / min for multiple heads must be achieved. Therefore, in our view it would seem that the designer/installer of a sprinkler system will need to devise a system that ensures these pressure and flow rates can be guaranteed at all times.

Further to the above, with respect to the effective operation of a sprinkler system, paragraph 58 of Section 1 of the consultation information states the following:- “*Where a mains system is to be used the designer should consult with the Water Authority to ascertain the typical operating pressure range and capacities available. Where the mains water supply is established as being able to provide adequate pressure and flow for the system, then it will be acceptable to use a mains connection in line with the recommendations of the appropriate technical guidance document such, as a British Standard.”*

Furthermore, the changes to the approved documents (para 2.6 particularly) state that:- *“Where town mains are to be used restrictions such as water meters shall not reduce the pressure and flow available below the performance specification detailed in the relevant technical standard*.”

In light of the above, it is clear that certain parts of the consultation information also require the designer/installer of a sprinkler system to ensure that adequate pressure and flow rates exist before a specific system design is chosen. That is, in relation to the design options available within the BS, if water and flow pressures can be guaranteed by the water authority then it would be suitable to design the system to be solely mains fed. Conversely, if the water authority cannot guarantee the required pressure and flow rates, then an alternative system will need to be devised, in line with the options set out within the BS.

In terms of the above, it would seem that the decision on the type of system to adopt will rest with the designer/installer, but will depend significantly on the advice given by the relevant water authority. As such, it would therefore seem if the water cannot guarantee pressure and flow rates **at all times,** a solely mains fed system would not be appropriate. In light of this, despite some of the comments within the consultation information (and by those presenting the consultation at the Fire Sprinklers Consultation event held in Cardiff on the 7th May 2013), it is clearly not the case that a mains fed system would be an appropriate design solution in all cases.

Taking this point further, in terms of guaranteeing pressure and flow rates, a problem now arises. As we understand it, water companies will not, and cannot, guarantee water pressures or flow rates at any point in time, as pressure and flow are governed by a variety of different factors. For instance, pressure and flow will fluctuate by season, locality and will also be intentionally reduced if there is a leak or a burst pipe. As such, water companies will not be able to offer any guarantee with respect to pressure or flow rates for the operation of sprinkler systems. Indeed, this is entirely in keeping with their responsibilities under the Water Industry Act. In this respect, paragraph 75 of Section 1 of the consultation information, states the following:- *“The Water Industry Act 1991 (at s.218) defines “domestic purposes” in relation to water supply. The use of water for the purpose of fire-fighting is not a “domestic purpose” within the definition in the Act. Accordingly there are no statutory legislation or regulatory standards for flow and pressure relating to supplies for automatic fire suppression systems.*

In light of the above, it is clear that not only will water companies not be able to guarantee pressure and flow rates, but they have no legal requirement or responsibility to do so. Indeed, the consultation states that Water UK advises fire sprinkler systems should be installed with consideration given to water companies’ regulations and levels of service, noting that local conditions or requirements may mean the preferred design option is not available (para 82). As such, the responsibility to comply with the requirements of BS9251 will rest with the sprinkler installer or, more accurately, with the developer. This therefore suggests that the developer will need to take steps to ensure the pressure and flow rates required under BS9251 are maintained at all times.

In light of the information above, it would seem that some form of water augmentation, e.g. a pump or pump and tank, will be required to ensure a sprinklers system has sufficient pressure and flow. Notwithstanding this, as pointed out within Section 1 of the consultation information, there is concern about sediment being disturbed if a pump is simply added to the mains system. Therefore, it would seem that a pump and a tank would be the only feasible solution to ensuring water pressure and flow are maintained. This is confirmed by paragraph 105 of Section 1of the consultation documentation which states that, “*the preferred approach of DCWW and Dee Valley Water is for domestic fire suppression systems to be supplied with water through an indirect storage-fed system such as tank and pump.”*

Further to the above, the consultation tries to suggest that even if pressure and flow are not achieved, a sprinkler system would still operate, albeit not to the standard required by the BS. For example, paragraph 95 of Section 1 of the consultation documentation states that:- “…*However the pressure of the system will dictate how far water is thrown from the head but not necessarily how much water flows from the head. Therefore if the design of the sprinkler system is based on a pressure, which at the time of operation is reduced, water will still flow from the system but will not be thrown so far from the head. This means that a sprinkler head will not be as efficient under reduced pressure but would likely remain effective at suppressing fire growth in many cases.”*

However, in our view, these comments are rather ill-considered and inappropriate. The idea that even if a sprinkler provides a lower water density or flow than required under the BS, it would still be ‘better’ than a non-sprinkered property, surely cannot be an acceptable basis for the proposed regulations. Clearly, if the case is to be made on the basis that ‘anything is better than nothing’, then there would be no need for complex impact assessments or thorough cost benefit analyses. Indeed, this notion flies completely in the face of one of the Welsh Government’s primary goals for the regulations – i.e. “*…that each residence (to which the Measure applies) must be provided with an automatic fire suppression system, that* ***the system is operating effectively*** *and that the fire suppression system complies with such requirements as may be prescribed by Welsh Ministers.”* (Paragraph 20 of Section 1 of the consultation documentation refers).

In light of the above, we believe the success of the Measure and the cost benefit analysis should be based on the effective operation of sprinklers systems, and not merely on the fact that sprinklers exist in a property (effective or not). In addition to this, the Measure and the regulations should not be designed in a way to allow a property to have a sprinkler system installed, that might not operate to its required specifications. Indeed, the changes to the Approved Documents stipulate that the system and its components must be designed and installed in accordance with an appropriate, fully implemented, technical standard such as BS 9251. As such, any regulations that are adopted in Wales must be robust enough to ensure that where sprinkler systems are installed, their operation is efficient, effective, and strictly in line with the proper specifications.

**Water pressures and general fire fighting**

The Section 1 of the consultation information states that water pressure are required for general fire fighting purposes, but are not guaranteed. However it is noted in the consultation that fire fighting water supply does not influence the design of building, whereas the provision of sprinklers (and the assumption that they will be working at the time of a fire) does impact on building design. Therefore the consequences of water supply failure might be greater for a mains-fed sprinkler system than for fire fighting operations. Furthermore, given that liability for the effective operation of a sprinkler system will lie with the developer, if water pressures and flow cannot be guaranteed, it is likely that the design of a system might require a pump and a tank to augment the water flow in all cases. This will clearly impact not only on building design, but on the design of the entire building footprint, as well as on cost. We cover this in more detail below, however, clearly these are important issues that will need to be considered from the outset and are likely to necessitate a further re-run of the cost benefit analysis and the impact assessment.

Further to the above, paragraph 98 of Section 1 of the consultation information also states that water companies will commit to informing customers if the pressure in their area might no longer be suitable for the effective operation of sprinkler systems. As such, the consultation suggests that occupiers can then make the necessary adjustments to their systems, such as installing pumps and tanks. Firstly, we do not believe this is accurate. For instance, in our discussions with Welsh Water, they have indicated that they might not inform customers in all cases where there is a drop in pressure or flow, but only in certain circumstances e.g. where there is a permanent reduction in pressure and flow. As such, we do not believe paragraph 98 is correct in this regard and we would advise further consultation with water companies on this issue. However, notwithstanding this, even if it were the case that water companies would inform customers in all cases where pressure and flow are affected, we do not believe the approach set out within this paragraph is acceptable, as is likely to cause a great deal of concern and confusion for both the property owner and the developer.

The installation of a retrofitted pump and tank is likely not to be a straightforward or inexpensive process and the proposed regulations simply cannot allow a new home purchaser to be left in the situation where their newly built home has a potentially ‘defective’ fire prevention system. In the event of such an instance, it is clear the purchaser will not expect to foot the bill for the necessary works to rectify the issue and will no doubt expect the developer or the NHBC warranty to address the matter.

In the event that there are disagreements on how the issue will be rectified, this could cause major problems for the occupier and also impact significantly on the developer. Furthermore, the developer could find themselves in a situation where they would have to inform a prospective customer that the sprinkler system might not be operationally effective in certain circumstances (due to water pressure and flow issues) and therefore, notwithstanding the safety implications of this, it could also impact on the potential saleability of the property.

There are clearly many more problems that will arise if the proposed regulations are made without the need to ensure that fire sprinkler systems are designed and installed according to the British Standard and are operationally effective at all times. Indeed, Para 109 of Section 1 of the consultation documentation, confirms the need for more clarity on this issue by stating that, in terms of mains fed systems*, “… for properties where fire suppression systems are installed, the two main water companies cannot guarantee pressures and flows above the minimum guaranteed standards for pressure (1 bar/ 10m head) and flow (9 litres/ minute) These flows and pressures apply to domestic supplies only.* ***This should always be taken into consideration by the designer/installer before proceeding with any installation.****” (bold emphasis is ours)*

In light of the above, these important issues cannot just be ‘sidestepped’, and effectively left into the hands of home owners to resolve if problems arise. As such, we believe the Measure must ensure that sprinkler systems are installed in line with the BS standard and any other specifications to ensure they are operationally effective at all times.

**Question 4: Do you agree that the guidance should retain the flexibility to refer to other fire suppression systems when such systems achieve a British Standard?**

**Yes.**

We believe this would be a reasonable approach.

**Question 5: Do you agree with the proposal not to regulate to require the maintenance of fire suppression systems?**

**No.**

Please see question 6 for more information.

**Question 6: Do you agree with the proposal to produce a householder’s guide to encourage the maintenance of fire suppression systems?**

**Yes.**

Since the inception of the measure, the issue of maintenance is one which has been discussed at length, yet the Measure seems to be relatively silent on the issue. We have heard conflicting viewpoints on need and importance of maintenance, however, one would imagine that the maintenance of a sprinkler system would be an integral aspect of the system to ensure it is operating efficiently and effectively. This is the case with most household appliances and systems, however, given the nature and remit of a sprinklers system, one would assume that regular maintenance to ensure the system is functioning properly, would be even more important. In this respect, we posed questions regarding maintenance at the at the Fire Sprinklers Consultation event held in Cardiff on the 7th May 2013. In terms of our questions, some audience members responded to state that maintenance would be essential, however, the presenter from BASFA (speaking at the request of the Welsh Government) seemed to suggest that home owners should not be too concerned with the maintenance of sprinkler systems, as there is *‘not that much to maintain’*.

In terms of these comments, they did not seem to be based on any technical evidence on the need (or otherwise) for maintenance. Conversely to this, the changes to the Approved Documents states that it is **essential** that automatic fire suppression systems are properly designed, installed and **maintained.** (Bold highlighting is ours). Furthermore, para 128 of Section 1 of the consultation information states that anecdotal experience of BS 9251 systems in residential premises has suggested that the lack of regular testing has caused issues with the operation of sprinklers systems, such as pumps seizing. As such, we cannot understand how in some cases the issue of maintenance is being considered so lightly. These comments are also rather alarming given that paragraph 3.2.6 of the cost benefit analysis states that, on the advice of the sprinkler industry, the assumptions used within the analysis are based all systems being maintained annually in accordance with the BS. In light of this, we believe it is inappropriate for the Welsh Government to effectively play-down the importance of maintenance and we believe the Welsh Government should consider this issue in much more detail, before suggesting to the public at large that sprinklers systems do not need to be regularly maintained.

Further to the above, given that many current appliances are not regularly maintained, (for example, we understand that less than 30% of gas boilers benefit from a maintenance agreement), it is likely that the maintenance of sprinkler systems might follow the same course, unless clear guidance is provided on the matter. Indeed, as the consultation document points out, with other appliances in the home there might be more immediate and obvious problems that arise to alert you to the fact that the appliance or system is faulty. However, with a sprinkler system, the fault might only be discovered when the sprinkler activates to address a fire, which could have serious implications.

Furthermore, careful thought must also be given to the safety of maintenance engineers and others that need to gain access to the system. In this respect, if a sprinkler system has a tank that is required to augment the water supply, which has not operated for a significant length of time, the stagnant water within the tank could represent a risk to safety, particularly if there are no regular maintenance procedures put in place for the tank and its contents, or if the tank needs to be replaced or repaired for any reason.

In addition to the above, paragraph 134 of Section 1 of the consultation documentation states that it may be beneficial to encourage the building insurers to request evidence of sprinkler system maintenance in order to provide insurance. In this respect, we believe it is imperative the regular maintenance is given far more weight within the current proposals, particularly if it will impact on the homeowner’s ability to obtain buildings and contents insurance.

In light of the above, we are extremely concerned with the comments and relatively little importance attached to the issue of proper system maintenance. We believe the issue of maintenance should be considered in much more detail and we certainly do not believe the Welsh Government should send out the message to potential home owners to suggest that they need not concern themselves with regular and proper maintenance of sprinkler systems.

Further to the above, we also believe the cost of maintenance should be considered appropriately within the cost benefit analysis and the impact assessment. Given our comments above, we are not clear how the issue of maintenance has been considered in the evidence on cost assumptions and therefore, we are concerned that the current cost assumptions with respect to maintenance might have not have been properly considered.

**Commencement and Transition**

**Question 7: Do you agree with the proposed approach to commencing the changes to the Building Regulations?**

**No.**

No. We do not believe the proposed approach has been properly thought through and therefore, we do not believe the regulations should be changed on the dates suggested.

In terms of transitional arrangements, we believe it is important to ensure that commencement and associated transitional arrangements should remain as currently applied, i.e. there should be no shortening of the period between setting the regulations and their introduction, in addition to the standard transitional arrangements.

Further to the above, we believe a longer transition period should be considered, which will allow sufficient time to address the concerns we raise within our response.

**Question 8: Do you agree that the suite of National Occupational Standards covering Mechanical Fire Protection remain relevant given the proposals covered by the new legislation?**

No comment.

**Question 9: Do you agree that existing sources of training will remain fit for purpose when the new legislation is implemented?**

We are unclear whether or not there is a *competent persons* scheme for the installation of sprinkler systems. We believe it is essential to ensure that those installing sprinkler systems are suitably qualified to do so and therefore, we believe consideration should be given to ensuring such a compliance scheme exists.

**Question 10: Do you agree with the proposed changes to the Approved Documents?**

**Yes – however…**

We have studied the approved documents and it is noticeable that there are many instances where they stipulate that sprinkler systems must be designed and installed in accordance with an appropriate, fully implemented, technical standard such as BS 9251: 2005 or equivalent. In this respect, we believe this supports our concerns above on the way in which the regulations are being considered. That is, there seems to be an approach being promoted that provided a sprinkler system is installed, it doesn’t matter whether or not the system is functioning properly. For example, we have highlighted occasions where the consultation information suggests that:-

* possible reductions in water flow rate and pressure are not considered a barrier to installation via mains supply
* the mere existence of a sprinkler system would negate the fact that the lack of water pressure and flow might result in a sprinkler system not operating properly
* maintenance is not a significant issue

However, despite these comments above, the approved documentation stipulates that sprinkler systems must be installed and designed to the appropriate British Standard and must be properly maintained.

We believe these contradictions need to be addressed before the regulations are made and again, we reiterate that any regulations that are adopted in Wales must be robust enough to ensure that where sprinkler systems are installed, their operation is efficient, effective, and strictly in line with the proper specifications.

**Question 11: Do you agree that the cost benefit analysis is a reasonable estimation of the estimated costs and benefits of the proposed regulations?**

**No.**

The cost benefit analysis clearly demonstrates that installing fire sprinklers into new ‘homes’ would not be cost effective. However, given the evidence we have gathered throughout this consultation, we believe it is reasonable to assume that the negative net present values provided within the results of the assessment would be impacted even further.

Pease also see question 12 for more information.

**Question 12: Do you agree that the Regulatory Impact Assessment has correctly identified the main risks and issues associated with the proposed regulations?**

**No.**

We do not agree that the cost benefit analysis is reasonable for the following reasons:-

We believe the cost benefit analysis could be based on incorrect information on the potential number of lives saved and injuries prevented by the proposed regulations. This is covered extensively above. In this respect, if incorrect data is inputted into the cost benefit analysis, it is likely to impact negatively on the soundness of the analysis and also on the results of the impact assessment.

In addition to the above, we believe the installation cost of a sprinkler system has not been properly considered. For instance, in our evidence above we have considered the issue of water pressure and flow and the implications these issues can have on the design of a sprinkler system. In this respect, considering the requirements of the BS and the position set out within the Water Industry Act on the responsibility of Water Authorities in guaranteeing pressure and flow rates, it is highly likely that in order to properly comply with the BS, the system’s water supply will need augmentation via a pump and a tank. Furthermore, there are also certain design stipulations given within the approved documentation on issues with respect to vehicular access to pumps etc (paragraphs 16.2 and 16.3 of the Summary of Approved Documents refers). As such, it will important to consider how a fully compliant and effective sprinkler system would be designed and costed, in order to provide the necessary infrastructure to cope with the system’s requirements.

In this respect, in order to provide a pump and a tank, careful thought will need to be given with regard to where the tank will be situated. Throughout the consultation process, our members have advised that situating a tank in the roof space of a dwelling will not be possible for the majority of cases. For instance, many of our members design homes with rooms in the roof space and, for many properties it simply would not be feasible to store tanks within the roof or any other part of the property. As we understand it, the Welsh Government has been provided with this evidence through the BRAC Wales forum. As such, it is likely the tank will need to be buried in the ground at some convenient point within the property cartilage to ensure access for maintenance etc. Clearly this will require a substantial cost, not only with respect to providing the tank and its siting requirements, but also with respect to the infrastructure required to operate the sprinkler system and also to design of the property to ensure the tank can be accessed 24 hours a day for maintenance and other requirements. Further to this, we must also consider the requirement for ‘cart way’ costs and the likelihood of a significant amount of material to being taken to land fill sites.

In terms of the above, we recently discussed these issues at a meeting with AECOM (1st May 2013), the consultancy charged with undertaking the assessment of the cumulative impact on development viability as a result of the proposed changes to Part L of Building Regulations and fire sprinklers. At this meeting the potential cost of a sprinkler system was discussed at length and it was acknowledged that there were some significant issues with respect to the sprinkler installation costs assumed within the assessment. Following discussions at this meeting, our members concluded that the cost of installing a sprinkler system in the average three bed semi detached dwelling could be in excess of £5000 per home (as opposed to £3075 as quoted within the WG’s viability assessment). As a result of these discussions, AECOM accepted that more work was needed to establish the actual cost of installing a sprinkler system. As we understand it, this work is currently being undertaken and will clearly need to be taken into account within the cost benefit analysis and also within the impact assessment for the preferred option.

In light of the above, we do not believe the cost benefit analysis has properly considered the impact of the preferred option. In our view, the analysis needs to be re-run as a matter of urgency, taking into account the issues we have raised above and throughout this consultation response.

**Other Issues**

**Sprinklers in individual flats**

Paragraph 63 of Section 1 of the consultation documentation states an automatic fire suppression system need only be provided within the individual flats and would not normally be required in the common areas such as stairs, corridors or landings.

We are concerned with this approach. As we understand it, the provision of sprinkler systems in communal establishments is particularly effective when provided in areas that offer a means of escape, such as corridors, stairs and landings. Indeed, where sprinklers are currently fitted in certain fatted developments, they are fitted within such areas. However, it would seem the legislation, if implemented as currently proposed, would alter this approach.

In light of the above, we are concerned with the proposals in this regard and we believe further investigation and consultation is warranted to ensure the legislation is fit for purpose and does not unnecessarily alter the current situation to the determent of safety.

**Backup power supplies**

We have a particular concern with the fact that, through the regulations, there will be no requirement for back-up power supply for pump fed systems. In this respect, we believe it is important to consider what might happen in the event of a power cut or if people with an electricity meters fail to keep up with their payments. In this respect, if the lack of power results in the fire suppression system not working, the implications of this could be very serious and concerning to the homeowner.

In addition to this, we have also heard evidence from the RSL’s sector that they are likely to come under pressure to pay for electricity, if the potential safety of the property and the occupants becomes an issue. Further to this, it is unclear how this might other types of landlord. In this respect, the approved documentation states that a landlord would be responsible for ensuring a sprinkler system operates to the required standards at all time and therefore, one would assume that landlords would also be under obligation to ensure the electricity supply remained constant, if the sprinkler system depended on it.

We believe these issues have not been properly dealt with and as such, the proposals need to be reconsidered to ensure these important matters are addressed.

**The cumulative impact of regulation**

Lastly, but most definitely not least, is the issue of the cumulative impact of regulations. In terms of this issue, it has been covered extensively both through our previous consultation responses to the sprinklers agenda and through the proposed changes to Part L of Building Regulations. We have also covered this issue separately, again at length, with the Welsh Government over the last few years. To be clear, we believe these proposals, along with the cumulative impact of separate national and local legislation, will severely compromise development viability in Wales. This will in turn compromise the delivery of homes, including affordable homes, and stifle growth and investment in many areas throughout Wales.

Essentially our concerns on this issue remain as valid as ever, perhaps even more so, given the potentially underestimated cost of providing and installing a sprinkler system.

In terms of the issue of cumulative impact, this was discussed at length at the recent meeting with AECOM on the 1st May 2013 (discussed above). At this meeting, the group was presented with a set of residual land values that were achieved as part of the viability testing undertaken by the consultancy on behalf of the WG. In this respect, within the three areas tested (Cardiff, RCT and Conwy), the vast majority of the residual land values were negative, proving that along with the changes proposed to Part L of Building Regulations and the other local requirements that need to be met, the proposal for fire sprinklers will have a significant detrimental impact on development viability. Further to this, one important issue to note about this test of viability is that the assumption was made to reduce affordable housing requirements to zero. As such, even without any affordable housing being proposed, the viability of development is significantly affected in all areas tested.

In this respect, given that the delivery of affordable housing is a key Welsh Government priority, one must question the appropriateness of any assessment of viability that deliberately excludes any assumption for affordable housing delivery. Notwithstanding this, it is telling that even with affordable housing removed from the equation, the impact on development viability is still devastating, even in higher land value areas such as Cardiff.

Furthermore, the fact that these proposals are being brought in through building regulations is a further point of concern. This effectively means that they will be required by law and will therefore not be ‘negotiable’, as is the case with many other pieces of regulation (particularly planning regulation). Therefore, the cost of these proposed regulations will be required irrespective of the separate priorities of the Welsh Government or local authorities. The cost of the regulations will also be indiscriminate, meaning that will affect development in all areas of Wales, whether land values are low or high.

In light of the above, we believe it is incumbent on the Welsh Government to fully explain the potential impact of these proposals on development viability and the delivery of homes in all areas of Wales. As such, we believe the impact assessment should fully demonstrate the cumulative impact of this and other legislation on land values in Wales and what this will mean for housing development, including affordable housing delivery across **each local authority** in Wales. Furthermore, we believe the impact assessment should also highlight the potential impact on regeneration, growth and investment in Wales, particularly given that as a result of cumulative impact of these proposals, there is likely to be a significant drop in housing development, especially in lower land value areas.

**Recommendations**

In light of the above, despite the numerous potential flaws within the cost benefit analysis, the impact assessment, the creation of the Measure, the potential success of the measure and the viability analysis work, it would seem there is a substantial amount of evidence weighted against the adoption of the ‘preferred option’. Furthermore, if the flaws we have highlighted within the research and evidence are rectified, we believe it would be reasonable to assume that the case for the ‘preferred option’ would be reduced even further.

In this respect, given the evidence to hand, whilst we agree with the principle of the overall Measure to tackle the issue of deaths and injuries from fire, we believe the evidence points to the regulations being considered with respect to Policy Option 2, which deals with the installation of sprinklers in all residential buildings within the categories covered by the Measure deemed to be cost effective (in accordance with the cost benefit analysis). At present, according to the cost benefit analysis, this policy option seems to indicate that the costs do not outweigh the benefits, however, we are mindful of the additional work that needs to be undertaken (as set out by our comments above), which ultimately might also impact negatively on this policy option - for instance, the need to consider the ‘new build vs existing stock’ argument etc.

There also needs to be similar work undertaken on the cumulative impact of regulation for Policy Option 2 (as we mention above), in order to ensure the impact assessment considers the full impact of this legislation, along with the plethora of other regulatory requirements that are sought on a national and local level.

**End.**

**Richard Price**

**The Home Builders Federation**

1. **Domestic Fire Satety (Wales) Measure – Legislation Committee Transcripts**

   <http://www.assemblywales.org/bus-home/bus-legislation/bus-leg-measures/business-legislation-measures-domfiresafety.htm> [↑](#footnote-ref-1)