The Building Envelope Authority

Mr Clive Betts MP
Chair, Housing, Communities and Local Government Committee
House of Commons
London
SW1A 0AA
Dear Mr Betts

2 July 2018

Dear Mr Betts,

I wish to comment on three matters raised at the Housing, Communities and Local Government Committee meeting on 27 June, 2018. For the avoidance of confusion, I include A2 rated materials in my definition of non-combustible.

Approved Document B Section 12

Dr Debbie Smith (managing director, BRE Global) stated her belief that Approved Document B (AD B) requires cladding above 18m to be limited combustibility. Despite warning against conflating issues, Sir Ken Knight (former BRE trustee) supported this view by saying that because Grenfell Tower clearly failed the Building Regulations B4 requirement, AD B should therefore be interpreted as requiring limited combustibility cladding. But this wisdom is only possible in hindsight, and it highlights a major problem with functional requirements – you only know that you've failed to meet them when it's too late. Knight refers to the letter you received from Dr David Rush in an attempt to give credibility to his view. Admitting he lacks the competence to comment, Dr Rush called on Angus Law (BRE lecturer in Fire Engineering) and Stephen Welch (BRE Centre for Fire Safety Engineering). To support their opinion, they conclude that a significant part of the guidance must surely be there in error and should be removed. I do not agree with Sir Ken Knight that this is an eloquent argument.

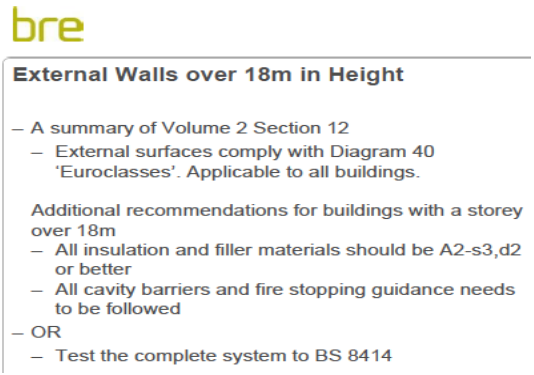
AD B Section 12 has had the same basic structure, neatly setting out the distinctly separate reaction-to-fire requirements for cladding and insulation for at least 27 years. Despite several public consultations and revisions, there has never been any mention of a change to the cladding reaction-to-fire requirements during this period. The view of these individuals and MHCLG since June 2017 is contrary to the following:

a. The opinions of the MCRMA and CWCT who wrote to you on May 10. Together these two organisations represent the majority of the rainscreen industry.

b. The expert witness opinion of Dr Barbara Lane, Fellow of Arup and the Royal Academy of Engineering, as supported by her evidence to the Grenfell Tower Fire Public Inquiry.

c. The physical evidence. It appears that possibly all of the 600 or so ACM clad buildings over 18m known to MHCLG, have combustible cladding. These projects will have been built over the past 20 years and involved thousands of clients, contractors, suppliers, architects, engineers, fire engineers and Building Control inspectors. If there was confusion or a difference of opinion, the outcome would be more varied and surely the BRE and MHCLG would have noticed.

You commented that the BRE must be the only organisation not confused by Approved Document B, but I'd suggest it is the other way around. The following is a slide from a presentation given by Stephen Howard (BRE Director of Fire Engineering) at the Firex conference in 2016:



This slide is simple to understand and gives the opposite interpretation of Approved Document B to that which Debbie Smith and Ken Knight claimed last week. It states that Diagram 40 (without exceptions) relates to the Class 0/Euroclass B (i.e. combustible) requirements for external surfaces, and that "insulation and filler" materials are required to be A2 (limited combustibility) or better. There's no mention of clause 12.5 (other than the reference to BS 8414).

It's an almost exact copy of a slide given in a presentation by Dr Sarah Colwell (BRE Director, Fire Suppression Testing & Certification) in the UAE in 2012 entitled 'External Fire Spread on High Rise Buildings'. In 2012, tower block fires in Dubai and ACM cladding were very high profile topics. Why do Sir Ken Knight and Dr Debbie Smith now have a polar opposite view to that presented by BRE senior technical staff before the Grenfell fire?

This remains a really important point, not just for the Grenfell Public Inquiry which may show that the cladding was compliant with MHCLG Guidance, but also to clarify legal arguments that prevail with tenants being expected to pay for remedial work. Thousands of blameless people around the country are worried about their buildings and distressed by the threat of severe financial losses from having to pay for their buildings to be re-clad. 'Advice' from MHCLG and the Independent Expert Panel has been extremely unhelpful since last June, defaulting to a vague 'seek professional help' message. The BRE and MHCLG's discordant interpretation of AD B has been a significant factor in extending and deepening the discomfort of thousands of tower block residents. There are tower blocks that will need to be clad for a third time, and people under the mistaken belief that their buildings are compliant. We now appear to have a remedial fund and that the Guidance will be changed to require limited combustibility. That could have been done right at the beginning and many months saved. Please note that the Secretary of State Approved Document B remains unchanged from before the Grenfell fire, and is technically still in effect.

It's also vitally important to set the context of the Hackitt report.

The Misdirected Hackitt Review

On May 17th, Dame Judith Hackitt released her report and said on Radio 4's Today program that the Guidance already required cladding to be limited combustibility, and therefore a ban wouldn't work. She was therefore, working on the assumption that an incompetent and amoral industry broadly chose to ignore Guidance for the sake of profit. There are many people within the industry who care deeply about safety (and indeed have lobbied government for many years to get the Guidance changed) who were angry and offended by this. Had Dame Judith not ensconced herself in the MHCLG offices that produce AD B, she might have challenged this pivotal assumption and scrutinised the actual Guidance and how it was arrived at. A further reason she didn't recommend a combustible ban can be seen in her curious terms of reference. Dame Judith wasn't asked to examine the actual regulations, despite the mollifying title of her report 'Independent *Review of Building Regulations* and Fire Safety'. Crucially, the report therefore failed to do the one common-sense thing that many were calling out for which was to demand a ban on combustible materials. Instead it took 9 months to produce just 156 pages that were immediately overshadowed that very evening by Dominic Raab's revelation that combustible materials would be banned.

Combustible ban and Testing

Having bowed to the weight of opinion on this, we now have a consultation on the ban of combustible materials (subject to height, use etc). This is broadly welcomed by the industry, with understandable exceptions. Kingspan make the point that testing is the only way to prove that systems are safe and they certainly have a point. There is no doubt that the BS8414 test is difficult to pass and that it is possible to produce a system with combustible elements that meets the requirements. Kevin Hollinrake correctly pointed out however, that the safest route would be to have testing *and* non-combustible systems. I believe this avenue should be explored. Despite the fact that it is possible to pass the BS8414 test with combustible products, significant problems remain for them:

a. You'd fundamentally still have *a building wrapped in a fuel source* and no control on what is done in the future. This is irreconcilable with the objective that residents should *feel* safe as well as *be* safe.

b. The main objection to the test is its relevance. It doesn't reflect the standard of workmanship that is often found in on-site construction or alterations that might occur within the lifetime of the building. The fire performance of combustible systems relies heavily on carefully detailed design and the proper installation of products such as cavity barriers (which all must work as intended for the full lifetime of the building.)

c. The concept of fire safety uses a multi-layer approach. The use of non-combustible products gives a vital added layer of protection should systems not be installed, designed or perform as predicted.

d. The BS8414/BR135 assessment is a pass/fail that does not convey enough useful information regarding the relative performance between systems. I believe that a system with combustible elements will always perform worse than a similarly configured, fully non-combustible alternative. In the presence of commonly found defects, there is evidence that the difference would be disproportionately greater.

e. There is a widespread call for a culture change, and as Dame Judith says, we should use all means 'reasonably practicable' to improve safety. Given that there are reasonable non-combustible solutions we should therefore use them.

f. However, we are also demanding increased competency within the industry and should note that the Engineering Council (the UK's regulatory body for the engineering profession) requires its members to hold safety 'paramount'. This is *much* stronger than 'reasonably practicable' and would mean that a combustible system is highly unlikely to be acceptable. The industry lacks the legislation and market conditions for engineers, architects and building control officers to enforce this principle.

I believe it is not acceptable in a modern society that fire safety regulations and guidance only aim to protect life. Anything more stringent has been seen as a burden on industry and profit. If the last person runs from a burning building as it collapses behind them, this seems to be interpreted by MHCLG as a success of Building Regulations. This 'bare minimum' attitude must change. Rightly or wrongly, building regulations compliance is seen as meeting an acceptable standard of construction and it is not difficult to understand why. Thermal Building Regulations requirements for instance go far beyond what would be considered the minimum standard for a reasonable quality of life. I'm sure they are not seen as a burden on industry to the manufacturers of insulation or their fire retardant additives. A fire-safety bare minimum approach leaves no margin for error, the consequence of which is an avoidable loss of life.

A broad, simple combustible ban helps address a multitude of problems. Windows, coatings and some minor elements present practical challenges that need to be addressed and further research and development is needed to ensure critical components are implemented in a robust and easy to

understand way. Whatever people may think of the construction industry, making the use of combustible materials *illegal* (rather than just optional guidance) will be highly effective and there is a wealth of experience and expertise within Building Control quite capable of administering a much simpler regime. Leaving a ban as guidance leaves open the 'fire engineered' route that destroys an elegant simplicity that is within reach.

A ban that sets the standard for others around the world to follow will be seen as a fitting turning point in the history of construction. This would not be an innovation-thwarting prescriptive ban in the sense that it excludes particular materials (e.g. you must use 'steel 3mm thick ..'). An 'A2 or better' obligation for example is an elemental performance requirement that will drive innovation and eventually reduce costs. Universities will research new materials. Tests will become more robust and reliable. Combustible product manufacturers are innovative businesses that will adapt, develop solutions and invest in new products. Most importantly people will be safer.

Kind Regards,

Dr Jonathan Evans

Director
MCRMA