

**Freedom of Information request reference number:** 6946.1

**Date of response:** 07/11/2022

**Request:**

*Please can you provide a copy of your full consultation responses to the Government's call for evidence in the Technical Review of Approved Document B of the Building Regulations which ran from 10:30am on 18/12/18 to 11:45pm on 15/03/19.*

**Response:**

Please find the document attached to this response.

Personal data has been removed from the attached documents under [section 40 of the FOIA – Personal Information](#).

We have dealt with your request under the Freedom of Information Act 2000. For more information about this process please see the guidance we publish about making a request on our website: <https://www.london-fire.gov.uk/about-us/transparency/request-information-from-us/>

1 March 2019

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Subject

## **Fire safety: Technical review of Approved Document B of the Building Regulations – A Call for Evidence**

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Organisation

**Ministry of Housing, Communities and Local Government (MHCLG)**

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### **Introduction**

London Fire Brigade (LFB) is London's fire and rescue service - one of the largest firefighting and rescue organisations in the world and we are here to make London a safer city. Decisions are made either by the London Fire Commissioner (the statutory fire and rescue authority for Greater London), the Mayor of London or the Deputy Mayor for Fire and Resilience. A Fire, Resilience and Emergency Planning Committee of the London Assembly holds the Commissioner, Mayor and Deputy Mayor to account.

### **Executive Summary**

LFB welcomes the consultation on the proposed technical review of Approved Document B (herein referred to as 'the guidance'). We have previously called for an urgent, full technical review of the guidance and welcomed the commitment within the Government's implementation plan<sup>1</sup> published in December 2018 to a full technical review and this consultation.

The guidance sets the standard for fire safety and is used to develop designs for large numbers of new and refurbished buildings and is also the benchmark for the development of other design standards such as BS 9999<sup>2</sup>/BS 9991<sup>3</sup>. It is also used for comparative analysis as part of the approach described by BS 7974<sup>4</sup>. This covers all new buildings and major refurbishments in England and so ensuring that the guidance provides the appropriate level of safety for the public and firefighters is critical.

Our response highlights a number of areas where our considered opinion is that the guidance needs a full technical review. This includes areas on limiting external fire spread, where automatic fire suppression systems (such as sprinklers) are installed, how the design of buildings can support the safety of some of our most vulnerable members of society, and how firefighters are supported with suitable access and facilities to conduct their duties. We are calling for a clearer definition of the types of buildings the guidance should apply to and the competence of those seeking to apply the guidance. We further recommend that there should be a period of no more than five years between reviews of the guidance.

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<sup>1</sup> Building a Safer Future, An Implementation Plan, December 2018

<sup>2</sup> Fire safety in the design, management and use of buildings. Code of practice

<sup>3</sup> Fire safety in the design, management and use of residential buildings. Code of practice

<sup>4</sup> Application of fire safety engineering principles to the design of buildings. Code of practice

We await further updates from MHCLG on how the accompanying Building Regulations consultation process will be amended and how those changes will work in practice. We call for the procedural guidance<sup>5</sup> to also be reviewed. We recommend that time limitations between the depositing of plans and construction working commencing are tightened to prevent gaming of the system if key technical changes are to be made within Approved Document B during that approval/construction period.

There remains a disconnect with the Building Regulations 2010 requirements and the Regulatory Reform (Fire Safety) Order 2005 ("the FSO") expectations of continuous improvement through the fire risk assessment process. Regulation 4(3) of the Building Regulations 2010 sets out that where the work did not previously comply with Schedule 1, when the new work is complete it should be no more unsatisfactory in relation to that requirement than before the work was carried out. This is interpreted as allowing fire precautions to be removed and replaced on a like-for-like basis - effectively meaning a building can be refurbished many times without the general fire precautions ever being improved up to modern standards.

Reviewing this guidance is just one aspect of an overall design, approval and regulatory system that has been identified as being broken by Dame Judith Hackitt within the Independent Review of Building Regulations and Fire Safety<sup>6</sup> (the Independent Review). Until all aspects of this system have been suitably addressed then buildings and all people living in, working in or in any other way using them will remain vulnerable in the event of a fire, as will any attending fire crews.

London Fire Brigade welcomes the opportunity to contribute to this call for evidence, and to support the review process proactively in creating new guidance material that seeks the right level of fire safety provision for both members of the public and our firefighters.

There is a public expectation that the technical review of Approved Document B will provide safe buildings as part of the wider regulatory framework review and this work must deliver on this expectation.

## **Approved Document B - Review**

The primary purpose of the guidance is to support the functional requirements of the Building Regulations. Due to the historic lack of regular review it often lags behind common practice and new and developing construction methods and techniques. It can therefore contain solutions which may, in turn, be out of date.

We seek an ongoing commitment towards a regular review period of the guidance, as recommended by Dame Judith Hackitt. We recommend that there should be a period of no more than five years between reviews which aligns with recommendation 6.2 (b) made by Dame Judith in her final report. This will ensure that new research, or revised information/opinion about the suitability of aspects of the guidance, are taken into account in a timely manner.

This review should be timed alongside the review of the other Approved Documents to ensure that there are no inadvertent impacts of any changes in other areas. These guidance documents should complement each other and be developed in unison.

At the time of writing, the clarified volumes of the Approved Document B have not been published and any revised content is therefore unknown. Some of the material within this consultation response has been raised previously by LFB. These are key issues that should be taken into consideration in any further development of the guidance.

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<sup>5</sup> Building Regulations Fire Safety Procedural Guidance

<sup>6</sup> Building a Safer Future, Independent Review of Building Regulations and Fire Safety: Final Report, May 2018

## **Applying the technical aspects of the guidance**

As raised in our response to the consultation on the clarification of Approved Document B, a key consideration must be who will be using and applying the technical detail within it. The guidance is open to being misapplied by a non-competent user, which is further complicated as it is possible to use ambiguous or out of date guidance, 'convenient' interpretation of the guidance and/or 'gaming' the guidance. The effectiveness of the design guidance relies upon its competent use, and the implementation of that design in terms of its construction quality and the ongoing maintenance of the building.

The guidance is not designed to be a text book and nor should it be. While commentary is beneficial to confirming the intent of aspects of the guidance, it should not need to explain the fundamentals of fire safety principles that need to be understood for correct application. A full appreciation of the principles of fire safety design and an understanding of how the guidance has been developed is required to apply the guidance properly. Therefore the competence of those applying (and assessing) the technical aspects of the guidance to demonstrate compliance is critical.

Along with competence relating to the technical aspects of the guidance there should be a full understanding and appreciation that the guidance should be used with particular regard for how the different parts of the guidance work with each other and not in isolation, undertaking an holistic approach to the design process.

LFB's experience is that the guidance is often deemed to be the 'maximum' level in terms of benchmarking fire safety design. We also have experience of some designers being under the impression that a solution is appropriate simply because the guidance doesn't explicitly say that it isn't. The review of the guidance therefore needs to reflect this reality and ensure that the language and detail in the documents cannot be open to misinterpretation or abuse.

Loopholes that currently exist in the guidance should be closed and areas open to interpretation should be rewritten to ensure these can no longer be used.

## **Call for evidence**

As the scope of the review acknowledges, the guidance was developed to take into account how buildings are used, human behaviour, materials and technologies and fire service operational response.

The way in which people inhabit and use buildings has evolved, with greater reliance on technologies as an integral part of our lives. The pace and development of technology and the materials we use to construct our buildings has changed, with many designs including environmental, sustainability and alternative fuel technology innovations. We also have an aging population and a desire for supported living at home rather than in a residential care setting which can lead to adaptations in design.

The pace of change over the years, including the examples above, has left the guidance lagging behind, due to a lack of a fundamental review of the guidance for a considerable period of time and further highlights the need for regular review.

## **Scope of the guidance**

We would urge more explicit detail regarding the scope and limitations of the guidance to prevent inappropriate use. LFB has direct experience of the guidance being applied to extremely tall buildings (for example a residential building in excess of 100m in height), when buildings such as these should be designed using a fire engineered approach.

For example, at present the guidance gives design information for buildings up to and including 30m in height for areas such as fire resistance periods. Because the guidance does not provide information as to what to apply for buildings of 60m, then the figure detailed for 30m in height is used, more often than not without any form of supplementary assessment or justification to confirm its suitability. We would therefore suggest that a height limit of, for example 50m, should be included beyond which the guidance cannot be used. The same could also be applied for a depth limitation to ensure that particularly deep basements are also outside the scope of the guidance and a full fire engineered approach from first principles should be applied.

Height and depth should not be the only criteria for considering limitations in adopting the guidance, and consideration should be given to overall compartment sizes, number of floors and building use. Buildings where extensive mixed use beyond what would be considered ancillary (e.g. plant room areas) should also be outside the scope of the guidance.

Changing the definition so that a building automatically falls within the guidance if either height or number of floor thresholds are met would prevent the current practice of designing a building up to a current threshold without having to put in additional design requirements, which is not in accordance with the spirit of the Regulations. One example where this occurs would be the design a block of flats to a height of 29.9m rather than 30m to explicitly avoid having to install sprinklers.

There is also a need to consider which building methodologies are included in the scope of the guidance. Some technological advances in using modern methods of construction may not be suitable for use in conjunction with Approved Document B without additional measures or further research to demonstrate their suitability.

Approved Document B should provide an unambiguous definition of what the guidance applies to. This should be revisited during the regular review process that we are also advocating. Taking an approach that covers what *is* covered by the guidance, rather than detailing exclusions, should ensure that any unforeseen design applications are not inadvertently included.

## **External fire spread**

While we welcome a ban on combustible materials in external wall systems we have urged caution to ensure this is not seen by some as the primary solution, or the only solution, to the issues raised by the Independent Review. The banning of combustible materials is dealing with a symptom but not providing the cure. There is much more to be done to ensure the safety of buildings, now and in the future, so that people are safe and feel safe. Urgent action still needs to be taken to improve the way buildings are designed, built and also maintained throughout their life cycle.

The guidance for buildings below the current threshold of 18m in Approved Document B does not always reflect the intention of the Building Regulations.

There is no justification for controlling or restricting fire spread on certain buildings above 18m yet providing no control or restriction for buildings below that threshold or other buildings types which are not currently covered by the ban.

The functional requirements of the Building Regulations provide that the external walls of the building will adequately resist the spread of fire. Those functional requirements are not related in themselves to building height or building type and we are of the opinion that nor should any solutions adopted by either law or guidance.

If a threshold, potentially a lower threshold than a height of 18m, is retained, we suggest that some control over combustible items on all buildings below this height should also be instigated. An option to achieve this may be to require buildings below the threshold to use products of limited combustibility, for the façade

system to undergo large scale testing and classification in accordance with BS 8414<sup>7</sup>/BR 135<sup>8</sup>, and make amendments to that testing/classification to incorporate measures for smoke production and flaming droplets.

## **Automatic fire suppression systems (AFSS)**

Areas where we seek a full technical review include the use of automatic fire suppression systems (AFSS), such as sprinklers and water mist, particularly in relation to where we previously called for a review as part of the consultation process in 2013 on the removal of the local Acts, and in particular Section 20 of the London Building Acts (Amendment) Act 1939.

We question whether the 30m height for AFSS in residential premises remains the appropriate height threshold. Our opinion is that a general height of 18m (considering current thresholds) is more appropriate. However, we would like to see AFSS fitted in:

- All purpose built blocks of flats (or all blocks over six storeys at the very least).
- All homes where vulnerable people live.
- All buildings housing vulnerable residents such as a care homes or sheltered accommodation.

If a height threshold is retained we would expect this to be reviewed regularly.

There should also be a clear expectation that where AFSS is provided in a block of flats that it is throughout the building in terms of any ancillary spaces, excluding the usual exceptions such as stairs and lobbies.

Our evidence shows that housing developers are consistently ignoring expert advice on sprinklers. Every year, we inform thousands of developers that sprinklers should be included in their planned build. However, an audit of purpose built flats built or refurbished in 2016 found only two out of the 15 blocks spot checked had had sprinklers fitted. Although we are telling developers that sprinklers will save lives, in most cases we can't force developers to fit them and it is extremely difficult to follow up and determine whether our advice was taken and sprinklers incorporated into the build. Self regulation in the building industry is not working and so we feel compelled to ask the Government to step in.

Further, we have found a deeply concerning lack of AFSS in care homes, retirement homes and hostels, with sprinklers fitted in just one per cent of incidents our fire crews have attended. Of the 428 fires London's firefighters attended at such premises in 2017, sprinklers were installed in just five of these incidents. There were three fatalities at these incidents and a further 53 people were injured.

Within the guidance as it stands, other tall buildings including hotels and student accommodation do not benefit from the inclusion of AFSS and we believe they should. It should be noted that BS9999 includes an expectation for AFSS to be included for all building types over specified heights.

AFSS coverage for warehouses should also be fully reviewed due to the potential risks posed to attending firefighters due to the size, scale and the way these buildings are now used.

Approved Document B should also include stronger signposting towards Building Bulletin 100: Design for fire safety in schools (BB100) as the appropriate guidance for fire safety design of schools and it should reiterate the importance of AFSS for these important community assets. Many schools are being built, or undergoing major refurbishment, without AFSS being included and we are concerned that the expectation set out in BB100 that sprinkler systems are included is being consistently ignored. There is overwhelming evidence that despite the expectation set out in BB100, sprinkler systems in schools are not being included even where the

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<sup>7</sup> Fire performance of external cladding systems

<sup>8</sup> Fire performance of external thermal insulation for walls of multi storey buildings

fire service has recommended their inclusion. For example, LFB reviewed a sample period in 2017 and found that between July 2016 and June 2017, we responded to 184 building control consultations for new builds or refurbishments in schools in London but sprinklers were only adopted in just over 2 per cent of cases.

Our considered view is that sprinklers need to be made mandatory in all new builds and major refurbishments. We note that the Government did not respond formally to the consultation on BB100 issued in the summer of 2016 and would urge the Department of Education to revisit this and undertake an urgent review of BB100.

### **Homes for vulnerable occupants**

The majority of fire fatalities occur within the home and often involve the most vulnerable members of our community. Ensuring that their needs are carefully considered in the design of buildings where they are likely to live is crucial.

At present there is little which provides specific design recommendations in relation to specialised housing. The guidance must recognise that the needs of individuals can vary greatly, hence the National Fire Chiefs Council (NFCC) guidance on specialised housing making reference to the person centred approach. The guidance in its present form does not align with adopting this approach but this could be remedied by reviewing the purpose groups and specifying active/passive measures such as the inclusion of AFSS and specific means of warning and escape measures such as not using an escape window.

The guidance relating to residential care homes in particular warrants a careful review and we advocate that AFSS should be included in all care homes regardless of their size and that more detail regarding the management of a progressive horizontal evacuation is needed to ensure the effective implementation of the design principles.

The guidance on the layout of automatic fire detection such as smoke alarms in domestic dwellings should go further and include reference to a person centred approach. By themselves, smoke alarms cannot prevent all fire deaths, especially for people with mobility difficulties or people who may not be able to respond to them, and they can also be vulnerable to poor installation or deliberate damage. However, smoke detection plays a key part in providing early warning of a fire and combating the risks of and from fire. In some cases fire detection alone cannot reduce the fire risk to acceptable levels and in these cases a combination of linked smoke detection, telecare and AFSS may be needed. In 2017/18, 49 per cent of homes where there was a fire attended by the Brigade did not have a working smoke alarm. We were so concerned by the number of fatal fires that had no working smoke alarm fitted in the home that in February 2017 we took the unprecedented step of releasing this information ahead of inquests into the fire deaths in a bid to prevent further lives from being lost.

It is important that, as a first step in reducing fire risk in the homes of vulnerable people, linked smoke detection is fitted in all rooms where a fire could start and that the resident can hear the alarm throughout the property, yet this is seldom the case. This is particularly pertinent where someone has either behaviours that increase the risk of a fire starting, they are unlikely to react quickly to a smoke alarm or they cannot move quickly to escape.

### **Means of escape for disabled people**

Regardless of building type, all occupants should be provided with means to be able to leave a building with minimal reliance on others to facilitate this. When considering disabled occupants, an evacuation strategy must ensure an equity in terms of the evacuation plan which includes taking into account the individual's right to not incur any further deterioration in their health (which could occur for those with complex health needs) and to maintain their dignity during this process. LFB has long advocated the use of evacuation lifts as part of the design strategy for buildings.

Refuge provision should always accompany evacuation lifts to ensure the safety of occupants while they await the lift arrival. This refuge should be a suitable location and ensure that the individual(s) are always communicated with in order to provide reassurance regarding the developing situation. An assessment should also be made to account for the number of occupants that are likely to require it during an evacuation.

LFB has received design proposals which include placing refuges within toilet spaces, for example. While this might be suitable to meet fire safety requirements, in our view it is not compatible with duties under the Equalities Act 2010 as it clearly risks humiliating and degrading treatment of disabled people. In our view such solutions should be specifically ruled out in the guidance as contrary to principles of inclusive design.

In terms of residential accommodation, even those including elements of extra care, we do not regularly see proposals including appropriate consideration for supporting any disabled people in escaping from the building and this needs to be reviewed. More purpose built blocks of flats incorporating 'extra care' needs and the increased use of short term lets for holiday rentals can significantly change the demographic of a building. Careful consideration to support the evacuation of disabled people should not be exclusively confined to consideration for wheelchair users but also any occupant who may need additional support.

There is a tendency to include disabled refuges in residential cores at the basement or ground level where typically a car park is provided. However it is often unclear who will maintain and manage the accompanying evacuation strategy. This has the potential for providing a confusing situation where disabled occupants are left to work out their own evacuation plan dependent upon where they are in the building and are not provided with appropriate communication and support. This is unacceptable in our view.

### **'Stay put' and the design of blocks of flats**

Stay put is an evacuation strategy central to residential building design for many decades. Blocks of flats are to be designed, built and maintained so that occupants can safely stay in their flat while a fire occurs elsewhere in the building. Regulatory requirements therefore focus on inhibiting fire spread rather than facilitating early self-evacuation by occupants not affected by fire and smoke where they are. While Approved Document B does not use the term 'stay put' or describe the evacuation strategy in any detail, the evacuation process is based on these design principles.

Designing and constructing buildings so that they resist adequately both the internal and external spread of fire and confine the fire to the compartment of origin has been generally successful and has been shown to be largely effective following the more widespread introduction of purpose built blocks of flats and maisonettes from the late 1950s onwards. Requiring standards which ensure fires remain confined to the room or flat where they start not only protect the lives of residents and firefighters in those buildings, but has in-built benefits to protecting property, the environment and our communities.

LFB has been clear that a stay put strategy is the correct advice in a purpose-built block of flats that have been built and are maintained correctly. Appropriate construction, management and maintenance of buildings is clearly critical.

A wholesale review of Approved Document B should consider whether the design principles which enable stay put are the only way of supporting safety within these buildings. In addition to considering how to ensure fire spread is inhibited, consideration should be given to other measures which would provide additional layers of protection. This should consider all options such as appropriate height thresholds, the number of staircases, the vulnerability of intended occupants, additional use of evacuation lifts and the more widespread use of critical life safety systems such as AFSS.



## **Design for the fire service**

We also seek a full review of firefighting access and facilities. This is to ensure that firefighters are offered the highest level of protection when entering buildings and are afforded the best opportunity to preserve life and prevent significant damage to buildings and the environment.

This review should include the vehicular access arrangements, and the provision of water for firefighting purposes (including fire hydrants). In addition when firefighting shafts are provided in buildings of a certain height or depth, they must allow firefighters to safely conduct internal firefighting, and search and rescue operations .

Changes in both operational procedures and the equipment we carry (including our ladder capability) which have occurred over the past few decades have not been accompanied by a review of the design provisions and this needs a thorough and urgent review.

One example would be changes made in operational procedures to afford greater protection to firefighters, such as taking a primary firefighting jet from the floor below the fire floor, have not been reflected in the guidance for aspects such as considering hose distances, therefore floorplates are still as large but firefighters are now, potentially, travelling further.

LFB tragically experienced the death of two firefighters within a basement in 2004 and wants to see a thorough technical review on both ventilation provisions and the designs of basements which can present significant hazards for firefighters.

There remains a need to review legislation relating to water supplies for firefighting operations. Along with unclear guidance, this presently results in an inconsistent approach by developers and water companies which has a direct relation on the speed at which firefighting can commence.

There is a lack of legislative powers to seek improvements in fire service access and facilities through the life of the building which means that it is imperative that the design for firefighters is right from the outset.

## **Clarification of Approved Document B**

In October 2018 we responded to the MHCLG consultation regarding the clarification of Approved Document B. At the time of writing this consultation response we are unclear whether feedback provided as part of our October response has been included or was considered outside the scope of the clarification exercise due to the guidance not having been published. We would welcome clarification on this.

## LFB comments for the review of the Building Regulation

<b>Name</b>	
<b>Position (if applicable)</b>	
<b>Organisation (if applicable)</b>	London Fire Brigade
<b>Address (including postcode)</b>	LFB HQ, 169 Union Street, London SE1 0LL
<b>Email address</b>	
<b>Telephone number</b>	0208 555 1200
<b>Please state whether you are responding on behalf of yourself or the organisation stated above</b>	On behalf of London Fire Brigade
<b>Please indicate whether you are applying to this consultation as:</b>	<b>Select one</b>
<b>Fire and Rescue Authority professional</b>	<b>X</b>

### Instructions for completing the table:

Please provide comments in the table below, bearing in mind the following 4 principals.

- What issues need to be resolved?
- Why should they be reviewed?
- What evidence already exists?
- What are the potential impacts of change?

Please provide any evidence you or your organisation have to support your suggestion If your comment relates to a specific area of technical guidance in ADB, please also provide the following:

- The specific Approved Document B Volume number you are referring to (Volume 1 or Volume 2) & the specific section and subsection you are referring to (e.g. section 2.5), the specific paragraph (e.g. 2.5(a)(i)) and if applicable the specific diagram, table, note or appendix you are referring to.
- Please ensure you clearly detail your justification for change in the comment box.

Please clearly detail your proposed amendment in the proposed change box.

**Note 1: We assume that any recommendations that are made as part of the ongoing public inquiry into the Grenfell Tower fire will be taken into account in any technical review process.**

**Note 2: We can provide additional evidence in relation to comments made within this table – please contact us for further details.**

Area of fire safety	ADB area	Relevant section of ADB (if applicable): volume/paragraph/diagram number	What issues need to be resolved and why should they be reviewed?	What evidence already exists?	What are the potential impacts of change?	Details of evidence provided
General	Review period	General comment	To ensure that the technical guidance remains current a defined review period needs to be detailed.	ADB has been subject to sporadic review historically rather than a committed program of continual technical review and development. This matter was raised as part of the Independent Review of Building Regulations and Fire Safety. We would advocate a period of no more than five years between reviews.	ADB should be more able to keep up to date with fire safety developments and address technical matters which are raised and considered appropriate for review.	Independent review of Building Regulations and Fire Safety
General	Format	General comment	We welcome the clarified version proposal of two volumes for the Approved Document but it must be ensured that all relevant technical details are supplied in each volume particularly where a provision is predicated on another from a different section of the guidance.	On certain schemes, for example student accommodation blocks, we have experienced a 'mix and match' approach whereby a block would be built with a single staircase as if it was a purpose built block of flats but then have an evacuation strategy that was more akin to residential (other) purpose group. Although the clarified ADB has not yet been published it is our understanding that flats design will be moved to Volume 1. While we support this concept, it must be ensured that all the relevant requirements and provisions from B1 to B5 have been transferred.	That design teams should have to provide much clearer detail in terms of a decision on the purpose group and which volume of ADB they will be using for the proposals.	
General	Format	General comment	Opportunity to restructure the guidance into a more logical order which includes fire service access as an initial consideration.	Some designs appear to follow the sequence of ADB literally which means that fire service access is left till later in the process. There is therefore a question as to whether the layout should form an order to coincide with how a building would be designed e.g. select a purpose group, suitable fire service vehicle access and water provisions, assessment of external fire spread and suitable structure, firefighter access into the building and the means of vertical escape etc.	Could ensure the more holistic approach to the guidance that should be adopted.	
General	Format	General comment	Usability of the guidance needs to be further considered, in particular where cross referencing of guidance takes place.	Key parameters such as when sprinklers should be fitted should be in clear, unambiguous tabular form. If there is a provision in one part of the document that might impact on another, then greater use of hyperlinks or other technology should be considered to ensure that this isn't missed. An index would also be beneficial to the user.	This would assist in terms of the cross referencing that is needed when using the guidance due to the parts being inter-related. We are not advocating repeating provisions but a mechanism to assist/remind the user of other provisions would be helpful.	
General	Structure	General comment	Greater emphasis is needed to Regulation 38 and the golden thread of design information	At present Regulation 38 detail ( fire safety information) is in Appendix G towards the back of the guidance. In our experience Regulation 38 is poorly complied with in terms of the information that is provided to the Responsible Person and what is then subsequently communicated to any residents/occupants. This has been highlighted in the Independent Review recommendations also as a key area where improvement is needed.	By bringing the section to the front end of the document the importance of the development of this information is highlighted to the user.	Independent review of Building Regulations and Fire Safety
General	Testing, classification and certification of products	Consultation question	The technical review process should consider whether the current testing regime provides sufficient reassurance in terms of the products and assemblies referred to as part of the guidance,	This issue was raised as part of the Independent review of Building Regulations and fire safety and remains an area of concern. LFB is aware of products which are marketed with claims of passing fire safety tests without providing detail around the scope, applicability and the limitations on the testing undertaken. Products should be clearly identified as to what tests they have passed and the limitations of their applicability. Any use of a product in a situation beyond which it has been tested for should be considered and justified by a competent person. All information about products and their use should be included as part of the Regulation 38 package. In terms of the testing itself, some products are being used having passed 'standard' BS476 (or European equivalent) fire tests however there is a question as to whether these fire tests need further development for particular products (i.e. furnace test standards for structural steel/concrete members being used for Cross Laminated Timber members). We are also of the opinion that fire tests should be undertaken on complete assemblies (e.g. a fire door with associated frame and all door furniture). A small change in door furniture, in theory, negates the certificate, although	To provide greater reassurance about the overall fire performance of a system and how this supports the design. Clearer details in regards to certification will also support the Regulatory oversight and the Regulation 38 process.	Independent review of Building Regulations and Fire Safety

Area of fire safety	ADB area	Relevant section of ADB (if applicable): volume/paragraph/diagram number	What issues need to be resolved and why should they be reviewed?	What evidence already exists?	What are the potential impacts of change?	Details of evidence provided
				that doesn't necessarily mean that the small change renders the assembly as not fit for purpose. It is unlikely (and costly) for a manufacturer to test with all possible door furniture, however significant changes (such as installation in an inappropriate frame) will not only negate the certificate but might compromise the fire integrity of the door.		
General	Testing, classification and certification of products	General comment	Guidance is needed which ties together standards which may sit in isolation to ensure that the process supports the overall design.	One example would be external fire spread assessments where BS8414 and BR135 are used. BS8414 solely discusses the test process whereas BR135 describes the classification system. Currently these are not reviewed together therefore determining an appropriate test to BS8414 is very dependent on accompanying appropriate classification criteria in BR135. An overarching guidance document which covers the overall process would be beneficial in this regard.	That the current approach is afforded suitable guidance to ensure that the process is fit for purpose.	
General	General introduction	General comment	There should be a clear commentary/intent at the front of each section which is designed to prevent any ambiguity in what the designer has to achieve to satisfy the requirement.	One example would be the current height threshold for a single staircase of 11m. This height interrelates to B5 in terms of an assumption that external rescue is achievable. This is not detailed within the guidance clearly and knowledge is often missing in this regard. LFB have received schemes for single staircase buildings where there is no external access for firefighters to pitch a ladder. The guidance does not detail this need and therefore designers (and some regulators) do not check this provision.	This would aid both designers and regulatory bodies in determining if the proposals satisfy the functional objectives by having a clearer understanding of the intent of the provisions.	
General	General introduction	General comment	The guidance is written in such a way that interdependency of the parts must be understood and taken into account in the design.	Designers still have an approach of 'cherry picking' which if done incorrectly in terms of this guidance could mean a lesser safety standard. Example would be a change in B1 may mean that the B5 provisions no longer work if they have been reviewed in isolation.	If the guidance could contain more explicit detail around use and application of the guidance, coupled with competence of the user then this would be positive. This issue is another area where the guidance is misused which will at least be addressed in the guidance.	
General	General introduction	ADB Vol2 0.13	Greater reference to the importance of meeting the functional requirements and other relevant legislation such as the Regulatory Reform (Fire Safety) Order 2005 should be made.	We have experience of a number of submissions where design proposals are made which would result in a building that would be extremely difficult to subsequently manage. Therefore we would question how such a design has met the functional requirements of the Building Regulations or the Regulatory Reform (Fire Safety) Order 2005 in terms of management.	The cross reference to other relevant legislation will be a positive reminder of the need to consider any further impact these may have on the design development.	
General	General introduction	General comment	The guidance should provide more detail on the expected benchmark in relation to when the 'non-worsening' condition is applied to existing buildings in relation to material alterations.	There remains a disconnect with the Building Regulations 2010 requirements and the Regulatory Reform (Fire Safety) Order ("the FSO") expectations of continuous improvement through the fire risk assessment process. Regulation 4(3) of the Building Regulations 2010 states that where the work did not previously comply with Schedule 1 that when the new work is complete it should be no more unsatisfactory in relation to that requirement than before the work was carried out. This is interpreted as allowing fire precautions to be removed and replaced on a like for like basis - effectively meaning a building can be refurbished many times but the general fire precautions may never be improved up to modern standards. Guidance should make it clear that it only applies to compliant building work (in relation to the period when the work was carried out) and not to subsequent alterations and changes which did not have Regulatory oversight.	Supports identifying the appropriate benchmark level with further commentary which could relate to the Regulatory Reform (Fire Safety) Order would be beneficial in this regard to ensure that the right level of fire safety design is achieved in refurbished buildings.	
General	General introduction	General comment	Clear detail about who should be applying the design guidance should be included taking into account the relative complexity and risk of the design. This should include any appropriate cross reference to outcome from the competence working groups currently reviewing this area.	Competence has been a key feature in terms of the Independent review of Building Regulations and fire safety. We have seen many schemes where ADB is being applied incorrectly through a lack of understanding of the fire safety principles. While competence levels should be relative to the complexity of any design/scheme there is a minimum competence level which should be clearly detailed.	Sets agreed standards of competence to ensure the effective design and implementation of fire safety measures.	Independent review of Building Regulations and fire safety
General	Interaction of Approved documents and control of works	General comment	Where works undertaken can impact the fire safety provisions, such as compartmentation, then these should be controlled under the Regulations.	There is a wider issue around the control of works that are carried out by third party installers in relation to , for example, telecoms and data service providers. Their installation often passes through compartmentation or via area such as smoke ventilation shafts having a potential direct impact on the	Oversight on works that could directly impact the fire safety provisions within a building should be referenced and	

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				fire safety provisions.	appropriately controlled.	
General	Measuring the height of a building	General comment	We would welcome an unambiguous and consistent approach to measuring the height of a building.	Dependent on what aspect of fire safety is being considered the current guidance refers to different height parameters. This can be confusing and subject to debate. We have had proposals for blocks of flats where the upper floor is the top level of a penthouse, this floor is over 30m in height and sprinklers have not been installed.	Consistent method of measuring would ensure clarity of the guidance.	
General	General introduction	Alternative approaches – cross referencing other industry guidance	Greater emphasis should be made on which industry guidance is considered appropriate in terms of fire safety design	ADB Volume 2 (0.27) provides a cross reference to Building Bulletin (BB) 100 for schools. We would welcome the guidance, in this instance, stating that BB100 <u>should</u> be used as the most appropriate guidance for schools. A large number of school schemes have been consulted on by LFB whereby BS9999 has been used for the design. Unlike BB100, BS9999 would not indicate that a water suppression system should be considered as part of the design. Not providing suppression appears to be a key driver in terms of design guide choice.	This would assist in ensuring that school designs in particular meet the expected fire safety standard. It would also ensure that the risk benefit analysis for including a suppression system is followed.	
General	General introduction	Alternative approaches – gaps in guidance	Without a clearly defined scope or, alternatively, signposting towards key guidance documents suitable for particular building types, some designs are simply slipping through the net or having inappropriate provisions being installed. ADB must clearly signpost appropriate design guidance if it does not cover the building type.	Prime example is Houses in Multiple Occupation (HMOs). While we acknowledge this is a term for licencing, further consideration needs to be given to the appropriate design guidance for these buildings. We receive numerous consultations on both new HMOs and houses converted into HMOs. At present these are being submitted with designs in accordance with LACORs – which is guidance, in our opinion, that was created for existing buildings only.	HMOs can house some of our most vulnerable members of society and as such should be afforded the appropriate level of fire safety protection. There are sufficient proposals for this type of building use that it warrants both the clarity and supporting design guidance created.	During 2015/16, the accidental dwelling fire deaths occurred in 10 (48 per cent) properties that were social housing properties. This figure includes two properties that provided sheltered housing for residents. Nine (43 per cent) of fatal fires occurred in privately owned housing, and a further two deaths (10 per cent) occurred in privately rented accommodation – including one death in a poorly maintained unlicensed house in multiple occupation with inadequate fire safety measures and the other with fire safety deficiencies that may have led to rapid fire spread.
General	Scope	ADB 0.21	There needs to be a clearly defined scope as to what types of buildings and construction methods are covered by the guidance. We would also suggest that a clear height and depth limitation is provided. Note: We do not believe an 'exclusion' list would work as a solution to this due to the opportunity for this to create a loop hole.	BS9991 clause 0.7, for example, now includes a reference to the guidance being generally suitable for buildings up to 50m in height and that more design considerations should be given to those over this height. Within London we have seen schemes for extremely tall towers where ADB is used as part or solely for the design. When questioned we have been advised that these types of scheme are 'common' in London. We have also received schemes where modern methods of construction are proposed and it is unclear if the view is that ADB covers its use or not or whether additional measures might be needed to demonstrate compliance with the Building Regulations. Therefore ADB should detail main methods of construction that in MHCLGs opinion are appropriate for use in combination with the guidance.	This would prevent the abuse of ADB where it is being used for building types and construction methodologies which may not have been considered when the guidance is developed. A regular review period would allow others to enter the scope as appropriate.	
General	Scope of fire safety Requirements.	Consultation question	It is our opinion that the life safety focus of the guidance should remain clear however when Local Acts like Section 20 existed these ensured that the risks of a major conflagration in certain areas were minimised. This provided the additional benefit of more buildings being covered by automatic fire suppression systems. We believe there should be further guidance provided but it must come with a Legislative control.	With the removal of the Local Acts there is a lack of Legislative protection for significant metropolitan areas (financial and business districts) and other key building stock such as key community assets like schools, community halls etc. Therefore we agree that guidance in this regard should be supported with Legislative control however it is our view that ADB should remain a 'life safety' guidance.	ADB remains with a clear focus on life safety and other controls are developed for aspects such as property and environmental protection	
General	Purpose Groups	Consultation question	Consultation poses a question regarding whether a risk profile approach as adopted in BS9999 would be a more appropriate method than the current purpose groups.	It is our opinion that a risk based approach as per BS9999 could provide a means of considering the occupancy group in more detail if the methodology reflected vulnerability but this is not currently the case.	Further to our above comment we believe that ADB should be for a distinct scope of buildings and therefore an approach	

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				However using a risk based approach would, in our opinion, lead to more (inappropriate) interpretation of the guidance. We therefore advocate retaining the purpose group principle. The purpose group approach in ADB should provide a clear starting point on which to develop the design using the guidance. It is unambiguous and not open to interpretation or debate.	allowing numerous building types to be considered under the guidance is not an approach we would support due to the potential misapplication. A clear purpose group would support clarity on the design approach and not leave the guidance open to misuse.	
General	Purpose groups	ADB 0.21	ADB is often used for mixed or multi use buildings where the ancillary use goes beyond for example, plant or a car park.	Blocks with extensive mixed use should be outside the scope of ADB as often they have interconnecting parts which add to the complexity of the fire safety design.  We have received numerous schemes where mixed use strategies have been adopted using the guidance in ADB beyond, what is in our opinion, the scope of the document.	A clear scope on what (and/or extent of) mixed use is covered by the guidance would ensure that where an alternative approach ( i.e. fire engineering) is appropriate it is used. This again will prevent the misuse of the guidance.	
General	Purpose groups	ADB Vol2 Table D1	Purpose groups need to ensure that they remain fit for purpose in accordance with modern living, modern fire loads, fire risks and human behaviours.	Evidence exists from both fires, auditing and building regulations consultations we have been involved in. LFB have particular concerns over the designs for accommodation which are specifically for more vulnerable occupancy types e.g. older people or the very young, known mobility issues or other factors such as drug or alcohol dependencies. Schemes are often designed using blocks of flats guidance which does not typically take into account aspects such as any additional support needed for escape etc. When designed there is an anticipation that the needs of the occupants may increase over time and this does not appear to be taken into account and should not solely rely upon increasing management controls. In particular the following occupancies/uses and their associated purpose groups should be reviewed: <ul style="list-style-type: none"> <li>• Self storage facilities</li> <li>• Housing that will accommodate people with vulnerabilities (or are anticipated to house vulnerable people during their life e.g. extra care or homes designed specifically for older people)</li> <li>• Warehousing that does not fit the 'traditional' model</li> <li>• Holiday rentals and short term lets of private accommodation</li> <li>• Nursery accommodation</li> <li>• Cluster flat guidance</li> </ul> New purpose groups may need to be formed rather than combining some of these more unique building types. We would certainly advocate that a new purpose group looking at vulnerable people in particular should be created with appropriate accompanying guidance. We would also strongly advocate that Residential (institutional) purpose group is removed from the guidance as there is insufficient design detail, in our opinion, to support its inclusion at present.	The review of the purpose groups in conjunction with a clear scope will support the guidance in terms of ensuring clarity on what it covers. It will also ensure that the guidance per building type is still appropriate	Fires such as: Croydon Surgard fire 31/12/18 Andover Ocado fire 07/02/19
General	Specialised Housing and care homes	Consultation question	The consultation raises whether the existing guidance needs to be reviewed. At present we believe the guidance in regards to sheltered accommodation and residential care homes is lacking in sufficient detail to address the different models of this type of accommodation that LFB have experience of.  We are therefore advocating a full review of this aspect of the guidance.	At present there is little guidance within Approved Document B which provides specific design recommendations in relation to accommodation such as specialised housing. The guidance needs to recognise that the needs of individuals can vary greatly hence the NFCC guidance on specialised housing making reference to the person centred approach. While the guidance in its present form does not align itself to adopting this approach, the purpose groups could be reviewed in this regard and greater active/passive measures such as the inclusion of fire suppression within the accommodation as well as appropriate means of warning and escape e.g. not using an escape window (which is currently permissible for certain situations) would assist in this regard. The guidance in Approved Document B relating to residential care homes in particular warrants a careful review and we advocate that fire suppression should be included in all care homes regardless of their size and that more detail regarding the management of a progressive horizontal evacuation is	A review of this area of ADB is urgently needed due to the nature of the occupants within these types of buildings. It is imperative that the guidance supports a design which takes into account the needs of vulnerable occupants and that the design provides a suitable basis on which an evacuation strategy can be developed and managed.	

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				needed to ensure that the implementation of the design principles will be effective.		
General	Sprinklers and other fire suppression systems	General comment	Residential (other) over 18m. All high rise accommodation where people sleep should be afforded the protection of water suppression.  LFB have been lobbying on this issue particularly in light of the loss of the London Building Act as this would have required sprinklers in this type of occupancy group.	Within the current guidance there is no requirement for residential (other) buildings e.g. hotels, student accommodation etc. to be sprinklered regardless of the height. All sleeping risk where people are in a 'high rise' building should be afforded that additional protection of automatic fire suppression systems. It has remained unclear to us why this has not been included in the guidance to date.	By including suppression systems in high rise buildings where people sleep this will afford a better level of protection. In addition the changing building models where there are more high rise student accommodation blocks, as one example, means that our risk landscape may be changing and not being fully accounted for.	
General	Sprinkler coverage in Residential blocks of flats	ADB Vol2 8.14	Where sprinklers are provided within a block of flats we believe that this should be throughout the building including ancillary areas such as car parks.	On the majority of schemes received which relate to a block of flats with ancillary areas at the lower levels (retail or car park areas) the interpretation of the guidance is that the sprinklers only need to be provided within the individual flats and no other areas. In the clarified version of volume 1, sections 0.13/0.14 this remains an unresolved issue in terms of the intent of the guidance on this particular matter as the wording has not changed.	That a more holistic view on the design is taken in regards to the development of purpose built blocks of flats which considers ancillary spaces at the lower levels in terms of matters relating to potential fire spread from one area of the building to another and the potential conflict that this creates in the design where sprinklers are not provided throughout the building.	
General	Sprinklers and other fire suppression systems	General comment (also related to B5)	To aid firefighting operations and increase firefighter safety, Consideration should be given to the potential fire loading within the buildings e.g. large single storey warehousing or car parks where sprinklers would not be included and where hose distances could be extensive.	A number of recent large compartments fires in warehouses and carparks have proved problematic for firefighters to get suitable access and water provisions to enable effective firefighting for a fire of this severity.	This should help to reduce large fires within this property type, increase the safety of firefighters and people in and around the building and reduce the impact on the environment.	
General	Sprinklers and other fire suppression systems	ADB Vol2 3.52	We believe that residential care homes regardless of their size should be fitted with an automatic fire suppression system.	LFB believe that all residential care homes and anywhere that vulnerable people live should be protected by a suppression system. There have been high profile cases such as the RosePark fire which reinforces this position. This is coupled with LFB findings regarding the ongoing maintenance and management of these types of premises.	Reduction of life risk for some of our most vulnerable members of our community.	<a href="https://www.london-fire.gov.uk/news/2019-news/february/fire-safety-failures-in-over-half-of-care-homes-audited-in-new-brigade-report/">https://www.london-fire.gov.uk/news/2019-news/february/fire-safety-failures-in-over-half-of-care-homes-audited-in-new-brigade-report/</a>
General	Sprinklers and other suppression systems	Vulnerable homes – suppression inclusion	There should be greater provision for including water suppression where vulnerable people live.	An increased emphasis on sprinklers for vulnerable people will encourage developers to consider installation, particularly for futureproofing domestic dwellings. The annual review of 2014/15 accidental dwelling fire data supports the need to consider personal fire risk profile along with vulnerability when ensuring an adequate level of fire protection. Home fire safety visits including fire prevention advice and the fitting of smoke detection have been proven to reduce fire risk but some people will continue to undertake behaviours that put them at high fire risk. For a proportion of these people specific tailored advice and the use of fire retardant bedding will reduce the fire risk to acceptable levels, but where these behaviours are combined with a limited ability to respond and/or impaired mobility automatic fire suppression systems offer the only effective risk reduction alternative. For these people automatic fire suppression systems such as sprinklers and water mist systems have the potential to prevent death and injury. Officers continue to work with manufacturers to refine solutions that are not actuated in non-fire situations but activate in time to prevent death or serious injury.	That the safety of vulnerable people will be improved and that this will support the drive for independent living in the home environment.	14/15 Review of Accidental Dwelling Fires and Fatalities 2014-15 – LFB report FEP 2484
General	Trigger heights and thresholds	General comment	We believe that all current trigger heights and thresholds in the guidance should be reviewed to ensure that they remain at the appropriate level.	We believe that it is appropriate to review all thresholds within the guidance due to the various areas we are highlighting within this return in relation to many of the pre-existing trigger points.	The review will ensure that the guidance reflects the anticipated level of provision it is seeking to provide for each condition.	

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General	Trigger heights and thresholds	ADB 0.21 (also see comment above)	We believe that there should be a height limit of 50m included as part of a review which seeks to limit the use of the guidance.	BS9991 clause 0.7, for example, now includes a reference to the guidance being generally suitable for buildings up to 50m in height and that more design considerations should be given to those over this height. Within London we have seen schemes for extremely tall towers where ADB is used as part or solely for the design. When questioned we have been advised that these types of scheme are 'common' in London.	We believe that the impact of the change will be positive in that it will mean greater use of fire engineering and BS7974. We firmly believe that ADB was not intended to be used for very tall towers and therefore this practice should be stopped. It also means that if fire engineering has to be used that competent professionals should be brought on board to develop the design.	BS9991 clause 0.7
General	Trigger heights and thresholds	ADB 0.21	We believe that there should be a depth limitation also. We would suggest that if it is felt that the guidance does not cover firefighting in deep basements these should be removed from the scope of the guidance.	Firefighting in basements is particularly hazardous due to the build up of heat and smoke within this space. This risk is likely to be proportionate in some way to the depth of the basement(s). This warrants a full review to ensure that potential use of the guidance beyond common building situations is restricted.	The change would be minimal in terms of the number of projects this would impact nationally however in terms of safety standards particularly for the safety of firefighters this would mean greater consideration would need to be given to the design for very deep basements.	
General	Trigger heights and thresholds	ADB Vol2 8.14	Further consideration needs to be given to lowering the threshold where an automatic fire suppression system should be included for residential accommodation. If the existing thresholds remain then we would advocate a lower height, e.g. 18m is more appropriate height at which suppression should be included (albeit trigger heights should be reviewed as per our comment above).	LFB are of the opinion that the current 30m threshold for the inclusion of automatic fire suppression in people's homes is not appropriate particularly when countries like Scotland have included lower thresholds. A lower threshold should be included in the guidance which considers the level of protection that should be afforded and other related matters such as time to intervention by the fire service for example. It will also address some of the concerns raised in relation to greater protection for vulnerable people in their homes.	Changing this provision to ensure more homes have automatic fire suppression fitted will, in our opinion, represent a significant improvement in safety provisions.	
General	Trigger heights and thresholds	ADB Vol2 17.2	We question the validity of the 18m threshold for a firefighting shaft and advocate a full review of B5 (comments made separately).	Our understanding is that the 18m threshold for a firefighting shaft was linked to our external firefighting and rescue capabilities using a wheeled escape ladder (incorporating an additional ladder attachment). These ladders are no longer in use but the design guidance has not changed in this interim period. LFB's front line appliances longest ladder will reach a maximum working height of 11m (13.5m ladder allowing for a pitch).. Furthermore, where fire mains are provided there is no requirement to provide vehicle access for high reach appliances. Therefore high reach appliance capability should not be factored into the design guidance other than where perimeter access may be being considered.	The guidance for firefighting access must keep in line with the equipment and operational procedures adopted by the fire and rescue service. The trigger points for internal firefighting operations in this regard therefore need a full review.	
General	Trigger heights and thresholds	ADB Vol2 12.7 and Diagram 40	We question the validity of the 18m threshold for a change in the performance of the external wall performance.	The performance of various products being used on external walls has been identified as part of the building safety program. Performance tests of some of the materials being routinely used on buildings demonstrate the rapidity of potential fire spread and its potential risk on occupants and impact on accompanying evacuation strategies. This coupled with our comment on our initial external firefighting capabilities in terms of equipment height. If B5 is relied upon as an integral consideration for the fire performance of materials permissible on external walls, then B4 warrants a full review in our opinion.	We have highlighted the need for further consideration in regards to buildings under 18m and the fire performance of their external walls. Not setting the appropriate standard in this regard could have a direct impact on public and firefighter safety.	
General	Trigger heights and thresholds	General comment	Where thresholds are introduced these should detail that a combination of height and number of floors is included.	We have experience where designers have used a height of, for example, 29.9m for a block of flats to explicitly avoid the inclusion of sprinklers. We also have examples of the same type of approach for avoiding other measures in ADB.	That the practice of 'compliance by stealth' whereby measures are actively avoided is addressed.	
General	Smoke and Toxicity	General comment	Toxicity is, as identified, a complex area and designs should be based on the occupants, as far as reasonably practicable, not being exposed to smoke or fire products. This must remain a key principle in ADB however further	While it can be obvious how particulates which are visible in smoke are moved and managed by the design of ventilation systems and other design elements such as passive fire protection, it is far less clear how the associated 'non visual' toxic products are behaving. Therefore a much greater understanding of the toxic products is needed to	A wider understanding of fire and combustion products and all of its associated toxic products is imperative is ensuring that our building design provides safe	



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			understanding of the movement of toxic products, and the potential impact on the health and safety of both occupants and firefighters is needed.	ensure means of escape routes and firefighting access routes remain tenable. It is unclear how, in designs such as enclosed corridors, the variety of modern building materials have impacted the potential build up of toxic products. This is not only during a fire but post fire when a building may be being re-occupied and may still be contaminated. Controlling the movement of these contaminants as well as the smoke products which are visual is imperative. We also need to have a greater understanding of how products that have been exposed to fire may react if exposed again in any further incidents and how the natural process of degradation impacts their chemical makeup. While primary concern would be the common means of escape this could also be relevant to escape within dwellings which have an open plan arrangement. Aspects such as post fire decontamination of voids, extract shafts etc. should also be reviewed to consider if the permissible design of these areas could impact the subsequent performance and behaviour in terms of this specific issue.	escape routes for occupants.	
General	Construction Technologies and Designs	General comment	We understand and acknowledge the benefits of Modern Methods of Construction, particularly as sustainable construction methods, and can see how a range of approaches can support the production of the volume of homes needed now and in the future. We would also agree that there is an absolute need for these homes to be of good quality and, as such, the potential impact of fire needs to be carefully considered so that they can be built to last.	The wider industry has forged ahead with increasingly innovative construction methods and materials. In our experience this has sometimes resulted in a building being proposed using MMC materials where the potential fire performance has not been fully appreciated. We therefore ask that any MMC where the fire performance is not clearly understood and demonstrated by appropriate fire testing that this should remain outside the scope of ADB.	Therefore reassurance is needed that fire performance of elements and systems have been fully considered, have been tested appropriately and provide the appropriate level of safety for both members of the public and firefighters alike.	LFB consultation return to HCLG select committee on 'Modern Methods of Construction' January 2019
General	Construction details	General comment	While we agree that ADB is a design guide and not a construction guide, there is clear reliance on construction quality to underpin the effectiveness of the design. ADB should support this by clear signposting to the use of competent contractors and should also consider whether there are alternative, perhaps more innovative ways of delivering fire protection measures where we know compliance is often poor e.g. cavity barrier provision.	We have numerous examples of newly built premises with significant passive fire protection deficiencies. This is also a highlighted issue in the Independent Review of Building Regulations and fire safety.  The construction detailing must be in accordance with the design and be of the appropriate quality as the evacuation strategies and management plans are developed on the basis of the integrity of the building.	Change to improve the quality of construction will have a significant positive impact on the life safety of both occupants and firefighters.  Changing the design and subsequent method of delivering fire protection could improve compliance.	Independent review of Building Regulations and Fire safety  LFB have fire data on this particular issue should evidence be needed.
General	Other issues - please specify theme	Cross referenced standards	Consideration will need to be given to any transitional period whereby the standards e.g. British Standards will need to be reviewed and updated to support any changes in ADB.	The current guidance refers to British Standards which have been withdrawn for a number of years. This means that while the industry guidance moves forward, designers can legitimately refer to old guidance as part of their design development.	Regular review periods of ADB would mean that any cross referenced standards could be continually checked also to ensure that the guidance keeps in line with industry e.g. British Standard reviews etc.	
Requirement B1: Means of warning and escape	Means of escape from blocks of flats	General comment	A thorough review of the design principles for blocks of flats needs to be undertaken. This should include the layers of protection, numbers of staircases in terms of height thresholds, the vulnerability of occupants and how their escape is suitably supported and ensured.	It is right that a wholesale review of ADB considers if the design principles which enable Stay Put are the only way of supporting safety within these buildings. In addition to considering how to ensure fire spread is inhibited, consideration should be given to other measures which would provide additional layers of protection. This should consider all options such as appropriate height thresholds, the number of staircases, the vulnerability of occupants, additional use of evacuation lifts and the more widespread use of critical life safety systems such as automatic water suppression.	A holistic review of the provisions for blocks of flats in terms of all of the sections of ADB is needed to reassure members of the public that these buildings remain safe in the event of a fire.	
Requirement B1: Means of warning and escape	Fire detection and alarm	ADB Vol1 B1/1.11-1.12	Guidance states that automatic fire and detection should be provided in circulation spaces and at least one alarm on every floor – we have evidence to show that this does not supply early enough warning and would like smoke detectors to be placed in all areas of	Automatic fire and detection systems cannot prevent all fire deaths – especially for people with mobility difficulties or people who may not be able to respond to them. They can also be vulnerable to poor installation or deliberate damage. However, smoke detection does play a key part in providing early warning of a fire and combating the risks of, and from, fire. In some cases detection alone cannot reduce the fire risk to acceptable levels	Review of the provision of automatic fire detection and alarm systems are a critical part in improving the opportunity to raise the alarm and support timely evacuation. By reviewing	13/14 Review of Accidental Dwelling Fires and Fatalities for 2013/14 - FEP 2302

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			risk, and heat detectors in the kitchen. In addition, carbon monoxide detectors should be provided for all new builds.	and in these cases a combination of linked smoke detection, telecare and automatic water suppression systems may be needed. In 2017/18, 49 per cent of homes where there was a fire attended by the Brigade did not have a working smoke alarm. <del>Whilst</del> While this is a relatively high proportion, the proportion of dwellings fires attended without working systems has been falling over time. Five years ago, the proportion was around 55 per cent. Where there are vulnerable people it is important that as a first step in reducing fire risk, linked smoke detection is fitted in all rooms where a fire could start, and that the resident can hear the alarm throughout the property, yet this was seldom the case. This is particularly pertinent where someone meets any of three following criteria: <ul style="list-style-type: none"> <li>• They have behaviours that increase the risk of a fire starting</li> <li>• They are unlikely to react quickly to a smoke alarm</li> <li>• They cannot move quickly to escape.</li> </ul>	the coverage this could improve the level of safety provision.	
Requirement B1: Means of warning and escape	Fire detection and alarm	ADB Vol2 B1/1.4	Guidance states that all new flats should be provided with a fire detection and fire alarm system in accordance with BS 5839-6: 2004 to a minimum of at least a Grade D Category LD3 system. However BS 5839-6: 2004 (and BS 5839-6: 2013) recommends a minimum of Grade D Category LD2 system.	We have experience of designers proposing Grade D Category LD3 systems in accordance with BS 5839-6 for new flats, despite this contradicting the recommendations within BS 5839-6.	Review of the provision of automatic fire and detection systems are a critical part in improving the opportunity to raise the alarm and support timely evacuation. By reviewing the coverage this could improve the level of safety provision.	13/14 Review of Accidental Dwelling Fires and Fatalities for 201314 - FEP 2302
Requirement B1: Means of warning and escape	Fire detection and alarm	ADB Vol2 B1/1.7	Sheltered Housing is briefly mentioned here and there is a suggestion that there should be a link to a central warden, monitoring point or alarm receiving centre. This is vague and does not take into consideration other types of specialised housing and the trend for reducing warden controlled buildings.  We have evidence to show that telecare is an important part of the design of buildings and should be linked to detection, particularly in specialised housing.	13/14 Telecare equipment with linked automatic fire detection has the potential to reduce the number of people killed by fire by detecting fire early and immediately summoning assistance. However to do so it must be linked to the correct standard of fire detection equipment and have a resilient method of summoning assistance. Telecare equipment was installed in seven cases (23 per cent of fatal fires in buildings) but it only raised the alarm in two. Where people had telecare equipment their address would have been registered with the provider and thus it would have been easy to confirm the address - if the telecare monitoring equipment had raised the alarm. Although a monitored telecare system with linked smoke detection in all areas of risk can initiate a call to Brigade quickly some people still require assistance to escape. Where someone meets the Authority's 'priority person' criteria, has limited mobility, aged over 60 and continues to smoke, automatic monitored fire suppression systems must be recommended. 15/16 There can be a delay in calling the Brigade to a fire for a number of reasons, such as stopping to fight the fire or no fire warning equipment being present. Below are the factors that contributed to delayed calls to fire fatalities for 2015/16. <ul style="list-style-type: none"> <li>• Being overcome by smoke and fire before the fatality could call the Brigade (13)</li> <li>• Stopping to fight the fire (1)</li> <li>• Ineffective emergency procedures (1)</li> <li>• Faulty fire alarm equipment (1)</li> </ul> It is not always possible to ensure that Brigade assistance is called as soon as a fire starts, however automatic fire alarm equipment, monitored alarms and automatic water suppression system can reduce risks considerably when fitted according to the fire risk and characteristics of the occupiers. In 2015/16, there was a 10 minute or more delay in calling the Brigade after ignition of the fire in just under half of all accidental fires in the home (41 per cent, or 2,169 fires). In total, 16 of the 36 fire fatality incidents experienced a delayed call, eight of these being accidental dwelling fires. There was a delay in calling the Brigade after ignition of the fire of over one hour or more in three of these incidents. For all fire fatalities in accidental fires in the home there was a delay of 10	For sheltered housing the method of fire detection and alarm and how warning is raised to both the occupants and others needs to be reviewed to ensure an effective method is referenced.	13/14 Review of Accidental Dwelling Fires and Fatalities for 201314 – LFB report FEP 2302  15/16 Review of Fire Fatalities and Accidental Dwelling Fires – LFB report FEP 2618

Area of fire safety	ADB area	Relevant section of ADB (if applicable): volume/paragraph/diagram number	What issues need to be resolved and why should they be reviewed?	What evidence already exists?	What are the potential impacts of change?	Details of evidence provided
				minutes or more on 52 per cent of occasions (11 fatalities). It is a reasonable assessment that based on the nature of their injuries 14 of the 21 accidental dwelling fire fatalities (59 per cent) were unlikely to survive by the time the Brigade was called. Where there are vulnerable people involved there must be a resilient method of automatically summoning assistance. If assistance is not readily available for those with severe mobility impairment, automatic fire suppression such as sprinklers may be essential if there are additional high fire risk behaviours such as smoking in bed. For specialised housing, staff availability onsite must be taken into account when deciding whether a monitored fire alarm system is an adequate safeguard.		
Requirement B1: Means of warning and escape	Fire detection and alarm	ADB Vol2 B1/1.36	Consideration should be given as to whether it is still appropriate to recommend that automatic fire detection systems are not normally needed in non-residential occupancies.	In our view the general expectation of the public is that, other than small simple buildings, all buildings will be provided with automatic fire detection systems.	Review of the provision of automatic fire and detection systems are a critical part in improving the opportunity to raise the alarm and support timely evacuation. By reviewing the coverage this could improve the level of safety provision.	
Requirement B1: Means of warning and escape	Occupant risk	ADB Vol1 B1.ii	The risk to the occupants is mentioned, but not the risk that occupants present themselves. Vulnerability is also not fully explained.	More specific consideration needs to be given in terms of what constitutes a vulnerable person, specifically in relation to fire fatalities and the design process. It is not only the vulnerable that experience accidental fires in the home and the Brigade works with partners to raise awareness of the risk of fire amongst the whole population of London. When the priority person characteristics of age, smoking and living alone for people that survive a fire are compared to those for people that do not survive a fire there is a clear contrast. The majority of the fire fatalities had a combination of characteristics that would delay their reaction or escape. Logically those who can respond to a fire and escape quickly are more likely to survive whilst those with some kind of impairment do not. The percentage of people recorded as casualties that survived an accidental dwelling fire and had a vulnerability (as identified during accidental dwelling fire reviews) was 35 per cent - 41 out of 116 casualties. The percentage of people with a vulnerability that became a fire fatality (as identified during fatal fire reviews) was 70 per cent - 21 of 30. This reinforces the priority person approach to risk but also supports the case for the Brigade's work targeting people who are less likely to die in a fire but are still at risk of having a fire. Design guidance needs to be written in such a way that it consider 'vulnerability' as a broad term which directly relates to the provisions detailed within the guidance.	Greater consideration needs to be given to the nature of vulnerabilities of any occupants and this relates to various comments in this consultation return: purpose groups, suppression systems, means of escape design etc.  More needs to be done to protect vulnerable people particularly with the drive for people to remain in their homes and live independently.	13/14 Review of Accidental Dwelling Fires and Fatalities for 2013/14 – LFB report FEP 2302
Requirement B1: Means of warning and escape	Means of escape for disabled people	General comment	Evacuation strategies for disabled people should be reviewed to ensure that it affords a safe and dignified means of leaving any building (including residential purpose groups). This should include greater use of evacuation lifts coupled with safe refuges (including a method of communication) where people can wait for the lift to arrive.	The approach to the evacuation strategy design for disabled occupants, in our experience, tends to have little thought and a single refuge is put in per floor with the subsequent strategy to be developed by the Responsible Person. There is little thought given to the provision of evacuation lifts unless they are prompted to consider this. Therefore clear guidance on expectations for design provisions should be included which should also consider the likely numbers and particular needs if these are known at the design stage. It is important however that an evacuation lift is accompanied with a safe refuge where people can await the arrival of the lift. Further consideration should also be given for schemes where there is a mixed use, for example a residential block of flats with a car park area. Each would have a different evacuation strategy and are currently expected to have different provisions to support the evacuation of any disabled occupants. We also advocate a further review in terms of the expectations for supporting the evacuation of any disabled occupants who may reside in a block of flats. Little (if no) provision is currently made in this regard and this needs to be reviewed.	More inclusive design approach which considers the needs of the end user and provides a greater reassurance that any disabled occupants will be afforded an equivalent level of escape opportunity as other occupants. Preferably with minimal need for reliance on others to do so therefore allowing for a safe and dignified exit.	
Requirement B1:	Fire Alarm	ADB Vol2 Section 1	Consideration should be given to ensuring that	We are of the opinion that further guidance should be developed which	Need to ensure that the	

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Means of warning and escape			more guidance is given in terms of the expectations on the provision of fire detection and alarm systems specifically for each occupancy type.	considers specific purpose groups and the needs of each occupancy type.	guidance supports the functional objective by providing more specific recommendations which are fit for each occupancy type	
Requirement B1: Means of warning and escape	Means of escape from flats	ADB Vol2 2.12a	Further guidance is needed to ensure that the window escape is suitable. This should account for the type of occupancy (e.g. aging population), the use of the space under the window and the provision for onward escape.	We have had a number of proposals where the area below the escape window is not under the control of the flats above and there have been various furniture, such as iron railings, making any escape more hazardous. Other submissions have proposed the window in an enclosed courtyard without onward escape.	Need to ensure appropriate means of escape for all occupants	
Requirement B1: Means of warning and escape	Means of escape from flats	ADB Vol2 2.12a	Consideration should be given to the height that window escape is suitable for. Current guidance allows for occupants to escape from a window ledge height of 5.6m.	We are of the opinion that window escape from height is not suitable for many sections of the population, for example; young children, the elderly and disabled persons.	Need to ensure appropriate means of escape for all occupants	
Requirement B1: Means of warning and escape	Means of escape from flats	ADB Vol2 2.13	There is currently no further restriction in ADB on the travel distances beyond the protected entrance halls.	We have had a number of flat designs where the rooms off of the protected entrance halls have what we believe are excessive travel distances in a single direction e.g. large penthouses with circa 18-20m travel within a room. These rooms may also include inner rooms and roof terraces.	Need to ensure that the overall travel distances within flats are restricted.	
Requirement B1: Means of warning and escape	Means of escape from flats	ADB Vol2 2.13b	To ensure a suitable means of escape, further guidance should be given to the location of cooking facilities and white goods within open living style flats. This should account for the human behaviour e.g. willingness to pass a fire; cumulative radiated heat, toxicity and time period at which they will be exposed; the fire spread; the visibility.	The layouts within open plan flats and studio style flats (diagram 3 ADB Vol2) and the location of the cooking facilities remains a constant source of debate. The term 'remote' is interpreted differently and the justification for the location of the cooking facilities varies wildly in terms of analysis. Cooking remains the most common cause of fire in residential dwellings. Around 46% of fires in dwellings are started by cooking appliances. In sheltered and extra care housing, the proportion is much greater at 79%. (ref 55.1 specialised housing guide).	To provide appropriate provisions for the means of escape for occupants with a clearer definition of where sources of fire i.e. cooking facilities should be located	
Requirement B1: Means of warning and escape	Means of escape from flats	ADB Vol2 Diagram 7	Clarification on the size of a sterile lobby in Diagram 7 a is needed as designers often propose extensive lobby sizes to increase floor plate areas.	Guidance should be provided with detail on the size of a sterile lobby. The size needs to consider the impact firefighting operations may have on the travel distance for occupants who may decide they wish to leave their flats on the affected floor (i.e. when hoses breach the lobby door the length of the corridor and lobby becomes smoke-filled). The lobby also typically contains the service risers which albeit we would consider a potential fire hazard designers argue this point.	Providing a size limitation on the protected lobby in this regard would be beneficial to prevent inappropriate interpretations of the guidance.	
Requirement B1: Means of warning and escape	Means of escape from flats	ADB Vol2 Diagram 9b	Consideration should be given to including guidance, or explicitly excluding, open plan flats with suppression as an option for diagram 9b layouts where the lobby to the stair is removed.	We often see proposals which seek to apply the diagram 9b arrangement with the common lobby omitted but then use an open plan arrangement within the flat. While this might be permissible the automatic fire suppression system standard can vary significantly (as does the coverage proposed) and no consideration is given to the potential impact of the smoke on the common staircase as no internal lobby exists. In addition where diagram 9b is being adopted we believe that the internal doors within the flat should be fitted with self closing devices.	Guidance should consider current trends in building design and ensure that it includes appropriate guidance.	
Requirement B1: Means of warning and escape	Means of Escape from Flats	ADB Vol2 2.26a	We question the effectiveness of natural vents located on external walls of high buildings and would welcome further consideration.	We have attended a number of fires where these vents have proven inefficient and/or failed to adequately vent smoke and heat from the stair or corridor. Their overreliance on ideal wind conditions and direction make them susceptible. It is imperative especially for taller buildings that any ventilation system is reliable at all times.	To determine that the ventilation systems in the guidance all offer the appropriate level of provision.	BRE research BD2410
Requirement B1: Means of warning and escape	Means of Escape from Flats	ADB Vol2 2.26biii	We question the principal of suggesting that the smoke vent doors should be a minimum of E30 <sub>s</sub>	As the fire floor vent will be open and the shaft is designed to be transporting hot gases we question how the compartmentation is to be maintained on other floor levels with a single E30 <sub>s</sub> vent protecting them. Therefore, in our opinion, the vent rating should be the equivalent of the shaft walls.	To ensure that the compartmentation of the shaft is maintained thus protecting means of escape routes particularly in buildings where there may be a delayed evacuation strategy adopted.	
Requirement B1: Means of warning and escape	Means of Escape from Flats	ADB Vol2 2.27	Reference to appropriate guidance for mechanical smoke ventilation systems where BS EN 12101-6: 2005 is not appropriate should be provided at the moment this is not covered.	Similar guidance to that provided in BS 9991: 2015 Section 14.2.4 and Annex A on mechanical smoke ventilation systems should be provided.	To ensure that mechanical smoke ventilation systems are designed to appropriate standards.	
Requirement B1: Means of warning and escape	Means of Escape from Flats	ADB Vol2 2.30	Limitation on the sharing of escape routes with ancillary accommodation. We generally support the intent of this	The vast majority of schemes we review include ancillary accommodation accessed from the only escape route at the same level as flats or from the only escape route from a single stair to outside. As this is such a common	It is our opinion that the aim of this provision is to protect the means of escape for occupants.	

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			paragraph and believe it should be extended to ensure that where there is only one escape route, ancillary accommodation does not have the opportunity to impact it.	occurrence either the guidance should be more explicit in this regard in terms of not supporting the approach or consider whether alternative provisions which might allow this layout are included in the guidance.	This is also important during the firefighting phase where the door may be held open to enable firefighter access to the ancillary accommodation, which could result in smoke in the corridor or stair.	
Requirement B1: Means of warning and escape	Means of Escape from Flats	ADB Vol2 2.38	We support this paragraph and believe that it should be clarified that providing the same standard of lobby protection as the stair it serves includes any smoke ventilation provisions.	We regularly receive schemes where the proposed level of smoke ventilation to lobbies serving the final escape route from a stair does not match the level of protection provided to the stair.	To ensure that the route from the stair to outside is sufficiently protected to support means of escape.	
Requirement B1: Means of warning and escape	Means of Escape from Flats	ADB Vol2 2.44	Current designs for residential blocks of flats typically include the single escape staircase serving basement levels. This is not currently accounted for in the guidance.	The guidance should either continue to maintain that single stairs should not serve basements or alternatively acknowledge the desired design layout and ensure that there is robust guidance for ensuring that the staircase integrity is maintained. We see a variety of different layouts and remain concerned with the approach particularly where it is a tall block and the basement areas are not afforded with automatic fire suppression, or the car park ventilation system is not provided with the appropriate level of redundancy even though it is relied upon to protect the lobby from smoke ingress. Separating doors within the staircase are often put in the wrong location such that firefighting operations and hose lines would hold them open thus negating any protection that this door might have afforded the upper portion of staircase.	Guidance should consider current building trends and provide appropriate guidance which ensures a consistent approach which affords the appropriate level of safety is afforded.	
Requirement B1: Means of warning and escape	Design for horizontal escape – buildings other than flats	ADB Vol2 3.1	We support the second paragraph that states the guidance is directed mainly at smaller, simpler types of design. We feel additional clarification on the types of buildings the guidance is appropriate is needed.	We have had a number of design submissions where the guidance is applied to larger, more complex types of design without additional consideration as to whether it is appropriate.	The guidance would be applied to the building types it is intended for.	
Requirement B1: Means of warning and escape	Other issues – Balcony and podium escape	General comment	Proposals are common which contain podiums, balconies and terraces. There is limited guidance to specifically address design features in term of the means of escape, fire spread and firefighting access.	Alternative proposals such as podiums should either be specifically excluded from ADB or guidance should be developed which includes reference to this type of arrangement, There are a number of building in London built to a bespoke design which would have benefitted from a more prescriptive approach.	Consider whether the guidance needs to include alternative building design layouts within the guidance to encompass modern styles of layouts.	
Requirement B1: Means of warning and escape	Design for Vertical Escape	ADB Vol2 Table 2	ADB is design guidance and in many cases the actual travel distance may not be known. Consideration for providing direct distances should be given.	This aspect of the guidance is poorly adhered to and therefore consideration should be given to including the direct distances within table 2 (for example) and the note indicating that the actual distance could be used as an alternative.	This will provide versatility to the building ensuring that any layout be within recommended limits and assist the responsible person carrying out a suitable Fire Risk Assessment	
Requirement B1: Means of warning and escape	Design for Vertical Escape	ADB Vol2 4.6b	This point needs to be clarified, as the current comment (b ii) refers to an alternative means of escape over 11m. This can only practically be via a second stair.	The guidance needs to be clarified in this regard as it appears to contradict itself within the same section.	Clarification point on the guidance.	
Requirement B1: Means of warning and escape	Design for Vertical Escape	ADB Vol2 4.35	This is generally the section referred to for the provision to protect the staircase from the adjoining carpark at the lower levels and basement areas. However, we question whether the proposed 0.4m <sup>2</sup> vent is adequate to deal with a fire in a large modern carpark especially during the firefighting phase. We would welcome further consideration on this technical aspect.	In many designs the lobby protection between the car park and staircase serving the upper levels is provided with an alternative means of venting due to the practical challenge of fitting the 0.4m <sup>2</sup> vent in. There is a question whether the vent size remains adequate but also whether the guidance should acknowledge typical designs and offer an alternative solution in this regard. Whatever guidance is provided this must ensure that the staircase is sufficiently protected from the ingress of smoke and this needs to consider typical fires from car parks including modern cars and other relevant factors.	Unknown until further studies have been carried out but it may provide a safer and more suitable design for the occupants on floors above by the guidance being reviewed to ensure it remains fit for purpose in this regard.	
Requirement B1: Means of warning and escape	Design for Vertical Escape	ADB Vol2 4.42	We support this paragraph and agree that if the escape stair is the only escape from the upper storey, the basement should be served by a separate stair. Although in our opinion this requirement is clear we have had a number of design submissions where this provision is not followed and we would welcome further	The vast majority of schemes we review include the single stair serving car parks and other spaces at ground and basement levels. As this is such a common occurrence either the guidance should be more explicit in this regard in terms of not supporting the approach or consider whether alternative provisions which might allow this layout are included in the guidance.	It is our opinion that the aim of this provision is to protect the means of escape for occupants on the upper levels. This is also important during the firefighting phase where the door may be held open to enable firefighter	

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			guidance.		access to the basement, which could result in smoke in the stair.	
Requirement B2: Internal fire spread (linings)	Lining performance	Table 10 classification of linings	Table 10 indicates that 'garages' can have European class C-s3, d2 linings. This has been interpreted to include car parking areas in residential areas.	We understand that some car parking areas have been fitted with European class C-s3, d2 linings due to the interpretation of table 10. We do not believe that the intent of this table was for car parks to be treated in this way. This could have a direct impact on both means of escape and firefighting in these areas.	Review of Table 10 in terms of particular provision for car parking areas. This should tighten what appears to be a loophole in the guidance	
Requirement B3: Internal fire spread (structure)	Compartmentation	ADB Vol2 7.7 note 2	Clause 7.7 on raised storage areas in volume 2 includes a note 2 which requires clarification as it details local agreement on varying the maximum dimensions but does not explicitly detail that these discussions should take place in conjunction with the fire service	The note should include a specific reference to discussion and agreement with the local fire service.	Ensure that the fire service are included in discussions where variations could impact the firefighter access arrangements	
Requirement B3: Internal fire spread (structure)	Compartmentation	ADB Vol2 7.9	Where a building is to be converted then the standard should afford the appropriate level of protection.	Consideration should be given to whether the guidance remains at the appropriate level. We would therefore question this particular provision as to whether it is appropriate for modern fire loads and whether the package of measures suggested by the guidance is sufficient.	Review will determine if this provision affords the right level of safety provision.	
Requirement B3: Internal fire spread (structure)	Compartmentation	ADB Vol2 Table 12	Compartment sizes in table 12 must ensure that they remain current and account for modern fire loading and uses.	The maximum compartment sizes should be assessed to account for modern working arrangements and potential fire loading, which may not have been accounted for when the table was designed e.g. large quick turnover distribution warehouses used for distribution of products sold online which contain a higher life risk due to its occupancy numbers. In the past 5 years there has been at least one high profile fire of this type which caused considerable damage. Consideration could be given to a volumetric control limit in this regard	The guidance must ensure it remains current in terms of the way in which we use buildings and that compartment sizes are appropriate to ensure that the subsequent fire risks and potential spread remains at the appropriate level.	
Requirement B3: Internal fire spread (structure)	Sprinklers and other Fire Suppression systems	General comment	See comments provided separately above on suppression systems.			
Requirement B3: Internal fire spread (structure)	Compartmentation	General comment	Consideration of how compartmentation is maintained in blocks of flats where adjoining balconies serving separate dwellings are present.	Adjoining balcony areas between flats are often not designed in a way which would prevent fire spread between the two areas and potentially between the two flats. Some designs incorporate a non fire rating screen with no consideration for the potential for fire spread between the spaces.	Would reduce the potential for fire spread between flats and prevent a weak area for potential fire spread.	
Requirement B3: Internal fire spread (structure)	Compartmentation	Table 14 and ensuring that the intent of the guidance is supported by the detail of the guidance in terms of the number of penetrations in a compartment wall/floor	At present there does not appear to be a limitation on the number of penetrations through a compartment wall/floor when considering the provisions of table 14. This needs to be addressed to ensure that the integrity of the compartmentation is maintained.	This issue has come up in discussion with numerous building control bodies in terms of the lack of restriction in this regard.	Ensuring that the integrity of a compartment wall or floor is not impacted by lack of restriction in this regard.	
Requirement B3: Internal fire spread (structure)	Concealed spaces (cavities)	General comment	Review should be undertaken to ensure that all options detailed within this section offer the equivalent level of protection to the opening.	The cavity closer provisions should all demonstrate the same level of protection. The area around windows in particular has, in our experience, afforded a means of fire spread into a cavity where the design or installation have not been undertaken appropriately. There is also evidence on a number of schemes that designers seem to see little benefit in the cavity barriers around openings seeking to omit these. Therefore the guidance should consider this area further and ensure that potential routes of fire spread into external wall structures are mitigated appropriately in the guidance. This may not only relate to cavity barrier provision but the guidance in relation to the performance of the external wall when considering items such as service fittings such as electrical sockets, light switches etc.	Guidance should consider how the potential means of fire spread into an external wall is mitigated.	
Requirement B3: Internal fire spread (structure)	Other issues – preventing fire spread through shafts in purpose built blocks of flats	General comment	A review should be conducted about the potential route of fire spread through service risers incorporated within a building. Main service risers, ventilation shafts (both 'normal' and smoke/fire) need to be considered in terms of how they prevent a breach of compartmentation between flats.	We have significant evidence that fire stopping of service risers is a particular issue along with the question over fire resistance ratings of smoke vent doors. How can a vent door be rated the same as a service riser door when at least one vent door is designed to be open? We also have evidence of fire and smoke spread via bathroom and kitchen ventilation routes. Should service risers be stopped at floor level and not be designed as an open (protected) shaft throughout a building?	There is a need to limit the potential fire spread pathways within residential blocks of flats if the integrity of the compartmentation principles is to be maintained	
Requirement B3: Internal fire spread	Section 11 Special Provisions For	ADB Vol2 11.2 & Table A2	We question the general principles in the current guidance with regards to the fire	Recent high profile car-park fires has provided some evidence that the current levels of fire resistance should be evaluated.	There may be some expectation for testing of fire sizes which	

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(structure)	Carparks and Shopping Complexes & Appendix A		loading being well defined and a low probability of fire spread.	We believe that further consideration should also be given to modern vehicles including, the fire load (the vehicle size and construction materials) and the type of fuel (alternative fuel together with charging points). We also question whether the minimum periods of fire resistance are still suitable taking into account modern building designs, construction materials and contents e.g. tall residential towers are above an open sided carpark with potentially a much lower period of fire resistance to it's structure. Guidance might also benefit from particularly excluding car stacking system.	supports industry guidance to form the basis of the recommendations.	
Requirement B3: Internal fire spread (structure)	Special Provisions For Carparks and Shopping Complexes	Currently no provision	Where car parks connect to residential developments, specific requirements for the separation between the two parts, both internally and externally should be fully considered.	This is generally for carparks under residential developments where a carpark fire producing high temperatures and large smoke plumes has effected the residential areas above.	The guidance being updated in this regard will ensure that any potential fire spread/impact from this commonly used design is mitigated.	
Requirement B4: External fire spread	External wall performance	ADB Vol2 12.7 and Diagram 40	We question the validity of the 18m threshold for a change in the performance of the external wall performance.	The performance of various products being used on external walls has been identified as part of the building safety program. Performance tests of some of the materials being routinely used on buildings demonstrating the rapidity of potential fire spread and its potential impact on occupants and accompanying evacuation strategies. This coupled with our comment on our initial external firefighting capabilities in terms of equipment height. If B5 is relied upon as an integral consideration for the fire performance of materials permissible on external walls, then B4 warrants a full review.	We have highlighted the need for further consideration in regards to buildings under 18m and the fire performance of their external walls. Not setting the appropriate standard in this regard could have a direct impact on public and firefighter safety.	
Requirement B4: External fire spread	External wall performance	ADB Vol2 12.7 and Diagram 40	We question the validity of the 18m threshold for the ban on combustible materials in external wall systems for only certain types of buildings.	Further review of the current scope of the ban on combustible materials in the external wall system needs to be undertaken in terms of the other building types not included in the current ban.	The performance of the external wall system and the expectations in terms of the guidance in relation to compliance with the Building Regulations need to be further considered. Not setting the appropriate standard in this regard could have a direct impact on public and firefighter safety.	
Requirement B4: External fire spread	External wall performance	General comment	Guidance should be included around items such as balconies, photovoltaic cells, green walls etc.	We have had numerous fires where rapid and extensive external fire spread has occurred via balconies, green walls etc. The MHCLG consultation and resulting ban has demonstrated evidence in this area. The guidance needs to consider balcony construction in relation to buildings of any height and how their design meets the Building Regulations in terms of limiting fire spread and how it supports the evacuation strategy for the building.	To reconcile the detail with the ban and ensure that the scope of the ban and how this area should be approached is clear	<a href="https://www.gov.uk/government/consultations/banning-the-use-of-combustible-materials-in-the-external-walls-of-high-rise-residential-buildings">https://www.gov.uk/government/consultations/banning-the-use-of-combustible-materials-in-the-external-walls-of-high-rise-residential-buildings</a>
Requirement B4: External fire spread	External wall performance	General comment	Specific guidance should be included regarding any means of external fire spread and how this should be considered. Specific example would be expansion joints.	We have had a number of fires which have involved expansion joints between buildings which have been extremely difficult to tackle from a firefighting perspective. This is an issue regardless of the height of the building due to the difficulty faced with accessing these areas.	Any means of potential external fire spread which has been identified needs to be covered by the guidance particularly where firefighting access is likely to be difficult.	
Requirement B5: Access and facilities for the fire service	Guidance	General comment: Introduction or provide an additional section	Whilst this section provides some useful information which in our view should remain, we also would welcome additional commentary to account for modern firefighting procedures, equipment and technologies, which should be standardised in all buildings. Examples are: <ul style="list-style-type: none"> <li>Information to be provided on arrival of the fire service for example in the form of a premises information box</li> <li>The controls for fixed installations such as corridor ventilation should be simple and intuitive in their use, located in a prominent position and be of a standard consistent</li> </ul>	In general, the larger the fire, the more resources are required. It stands to reason that, in most cases, the faster firefighters can get to the scene of operations and commence firefighting and rescues, the probability of saving life will increase and the physical damage to property will reduce. In providing accurate information as to the location of the fire, the provision for suitable water supplies and consistent operation of controls should decrease operational intervention times.	Standardisation of controls may have an impact on industry and the information for the fire service can generally be provided during the handover of information (Regulation 38). However, the speed to commence firefighting operations is essential to save life and prevent the fire from developing. Any information or technology that can assist firefighters will be beneficial in this regard.	

Area of fire safety	ADB area	Relevant section of ADB (if applicable): volume/paragraph/diagram number	What issues need to be resolved and why should they be reviewed?	What evidence already exists?	What are the potential impacts of change?	Details of evidence provided
			<p>design.</p> <ul style="list-style-type: none"> <li>• Modern systems which assist firefighting operations, such as intelligent fire alarm and wayfinding systems should be encouraged and required once recognised as common practice and demonstrated to work effectively .</li> <li>• Staircases in large buildings should be numbered to assist firefighters during operations.</li> <li>• Individual floor levels should be numbered with a visible plate in each stair. The number at each floor plate level should be the same number in each stair and lift.</li> </ul> <p>To keep up to date with technologies, this section should undergo a regular review, our recommendation is a minimum of every 5 years.</p>			
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	General comment	We would advocate a full review of the guidance relating to firefighting water provision as it currently does not provide sufficient detail or clarity in our opinion. It also provides loop holes which are currently being exploited in terms of some of the provisions.	There remains a need to review Legislation relating to water supplies for firefighting operations. Coupled with unclear guidance, this presently results in an inconsistent approach which has a direct relation to time of fire service intervention. Water supplies are critical not only for firefighting safety but to effect fire and rescue service duties and the guidance presently does not provide sufficient support in this regard.	A more consistent approach which will place a greater importance on the need to ensure available water supplies for firefighters to undertake their duties.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	Volume 1, B5. (1) and B5. (2)	Provision of water for firefighting.	Specific examples of the following can be provided upon request: 1) developments that have been completed and often inhabited without appropriate water provisions for firefighting 2) properties that have been converted from farms to industrial usage without any hydrant provisions 3) developments using 63mm water mains which are unsuitable for fire hydrants 4) developments with appliance accessibility issues 5) low water pressure and supply issues.	* Clear and consistent standards of water provision for firefighting regardless of the building type. * Shift of responsibility for fire hydrant installation at new development sites from the Fire and Rescue Service to the developer. * Address the issue re Fire and Rescue Services not being statutory consultees on water provisions for firefighting meaning properties and developments would be built with appropriate firefighting facilities including water supplies. * Referral to the relevant British Standards would ensure more transparency and more consistency.	Can be provided on demand as necessary
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 15.7	Further information should be provided on how the distance from the hydrant to the building is measured. Consideration should be given to detailing that it should be providing a route suitable for laying the hose between the hydrant to the proposed vehicle parking position. (This requirements should be duplicated in the dwellings Volume).	We have experienced a number of cases where buildings have been proposed up to 100m from existing hydrants, measured as a direct distance. Due to a lack of clarity in the ADB document, proposals and even installations have been made where hydrants are positioned to the other side of obstructions such as fast roads, walls or other obstructions unsuitable for laying hose.	Providing hydrants at a reasonable distance will ensure firefighters can get water to the scene of operations in a suitable time frame. This will impact on the fire development preventing spread and escalation of the incident.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 15.8	The guidance detailing alternative water supplies requires review and removal in our opinion. Any option within the guidance should be a reasonable alternative offering a comparable level of provision.	The practicalities and time that it will take firefighters to set into alternative water supplies makes it, in our opinion unsuitable for the majority of fires where fast intervention is essential. Alternative water supplies should only be used in specific cases where property protection is the main focus. Where they are used, further guidance should be provided which should include; the time it takes to set up firefighting operations, providing a suitable	Water supplies are generally provided to new buildings and developments and hydrants can be added at this stage at little cost.	



Area of fire safety	ADB area	Relevant section of ADB (if applicable): volume/paragraph/diagram number	What issues need to be resolved and why should they be reviewed?	What evidence already exists?	What are the potential impacts of change?	Details of evidence provided
				parking position of the fire appliance, the distance from the pumping appliance to the water source and the distance from the water source to the access point. A standard fire service open water drill compared to a conventional drill working from a hydrant could give an indication of the additional time that it will take firefighters to achieve an adequate water supply when considering this particular issue.		
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	Water supplies	Greater guidance about water provision should be incorporated to ensure that this important aspect of B5 is suitably covered.	Greater detail is needed in terms of what reasonable water provisions are which should include reference to areas such as; 1) The need for firefighters to be able to lay hose between the water source and the premises – therefore the route needs to be suitable and safe to do so. 2) That the water supply should be fit for purpose in terms of delivery with specific recommendation on flow rates 3) To British Standards for areas such as hydrant equipment (BS750/BSEN14384/BS5834-4/BS3251 and BS3251)	Water supplies would be more consistent and provide a reliable source for firefighting operations.	
Requirement B5: Access and facilities for the fire service	Fire Mains and Hydrants	General comment	The guidance should be explicit in regards to the distance for the appliance parking position to any building and why this is the case.	We have received a number of consultations where horizontal mains have been proposed which do not offer, in our opinion, an overall comparative level of provision. Fire appliances carry equipment which needs to be physically transported therefore the guidance needs to make it clear that it is not merely about the transportation of water into the building that is the main factor.	Designers will be clearer as to why the guidance details vehicular access provisions.	
Requirement B5: Access and facilities for the fire service	Fire Mains and Hydrants	Provision of fire mains	The guidance should consider the risk of falling debris needing to be assessed when selecting fire main positioning. Additional fire mains or a method to protect fire crews accessing the building may therefore be necessary.	This provision is in the current BS 9990 "In selecting positions for inlet connections, account should be taken of the positions of fire hydrants, the parking locations for fire appliances, and the effect that falling debris and other possible occurrences during a fire might have on the continuing viability of the location". This is a recommendation we support and advocate that it should be included in ADB	This should not only improve firefighter safety provisions but will support the operational incident management by minimising the risks needing to be considered.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 16.2a	The current document does not specify a distance between the perimeter of the building and the fire appliance parking position. We would recommend that a reasonable distance over suitable terrain is specified which takes into account firefighting access points into the building, the visibility between the appliance and the access point and the amount of heavy and cumbersome equipment that will be need to be carried to the entry point.	We have experience on a number of proposals where the vehicle parking position is, in our opinion too far from the entrance door. This results in Firefighters traveling long distances delaying the response time.	This is more of a clarification as the B5 functional requirement has not changed in this regard.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 16.2a and Table 19	We would support a review of perimeter access and how this practically works for crews particularly in relation to access and effectiveness of intervention. Whatever is provided needs to supply firefighters with reasonable access which considers the shape of the building's foot print.	In our opinion the vehicle access requirements in the current document are based on a percentage of the perimeter of the building , designed to a rectangular shape. This limits the direct distance for firefighters to operate internally to approximately 67m. However, a building with an 'L' shaped footprint can considerably increase firefighter travel distances within the building. We have received projects where this has been an issue – warehousing in particular.	Possible additional costs for compensatory features such as suppression but with added benefits to improve safety for firefighters, aid property protection and business resilience.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 16.3	The current ADB allows the provision of a dry rising main for flats as an alternative to providing access to within 45m of all points within each dwelling. We consider that this alternative approach significantly increases the time it will take for firefighters to fight the fire and perform rescues. We therefore consider that a suitable automatic fire suppression system could be a reasonable compensatory feature. Its aim would be to suppress the fire and allow time for firefighters to secure a suitable water supply using the dry rising main.	Our initial firefighting attack to a building where access is designed to within 45m of all parts of the dwelling could be with a hose reel branch deployed directly from the fire appliance. Fire crews will don Breathing apparatus and be in the building actively firefighting and performing rescues within minutes of turning up to the scene. Our initial firefighting attack (if using a dry riser) will require pumping appliance to be set into the hydrant, water can then be pumped via laid hose to charge the dry rising main. Firefighters will then access the stair and ensure that the valves are in place and closed at all levels. Firefighters will don breathing apparatus at the bridgehead and ascend to the fire floor. Entry will be made to the flat and firefighting operations will commence using a 45mm hose. This process will take considerably longer than where access is provided to within 45m.	There will be an additional cost to the design for the suppression system. However, occupants will have the protection of a suppression system to aid their escape. It is also expected that firefighters will be attending smaller fires causing less damage from smoke, fire and water.	
Requirement B5:	Access and Facilities	ADB Vol2 16.11	The provision for a turning circle after a	One example is where the reversing distance is within the 20m maximum but	We believe that there would be	

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Access and facilities for the fire service	for the fire and rescue service		maximum of 20m is a reasonable distance to enable movement of appliances and to assist other emergency service vehicles such as ambulances to access the scene. However, there are instances where this could be altered and we would welcome early consultation with the fire service to this point.	the fire appliance would be required to reverse onto a fast road e.g. dual carriageway.	little change to the design of the building as the majority of consultations will just require alternative landscaping.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 17.2	We question the validity of the 18m threshold for a firefighting shaft and advocate a full review of B5 (comments made separately).	Our understanding is that the 18m threshold for a firefighting shaft was linked to our external firefighting capabilities using a wheeled escape ladder (incorporating an additional ladder attachment). These ladders are no longer in use but the design guidance has not changed in this interim period LFB's front line appliances longest ladder will reach a maximum working height of 11m (13.5m ladder allowing for a pitch). It is essential that clarity around any threshold is also included to ensure that designers understand the reasoning behind it. We receive numerous schemes where buildings are above the threshold height but designers argue that putting a separating door in the staircase to access, for example a triplex apartment, the need for a firefighting shaft is negated because the whole of the top of the building is private and the highest common area may be under 18m.	The guidance for firefighting access must keep in line with the equipment and operational procedures adopted by the fire and rescue service. The trigger points for internal firefighting operations in this regard therefore need a full review.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	Design and construction of firefighting shafts	The guidance needs to be explicit in regards to what are considered to be the appropriate materials used in constructing firefighting shafts.	We have received proposals for both timber and fully glazed firefighting shafts (including doors, floors, lift cars and separating walls). Because the guidance isn't explicit in this regard (we believe this is on the basis of assuming that the shafts will be 'traditionally' constructed) this is considered a loop hole being exploited. The protection of a firefighting shaft should be considered sacrosanct due to the unknown timeline that firefighters will be working within a building tackling a fire/incident. It is imperative that the shaft not only provides a safe access into the building but continues to provide a safe egress route. Firefighters should also be able to work within this environment 'with the understanding that the shaft is robust enough to offer the level of protection expended and to handle the activities going on within and around it. Therefore we are of the opinion that a firefighting shaft should be constructed fully of non combustible materials and a strict limitation be placed on the amount of glazing that can be used within in.	Tightening up of the acceptable materials will maintain firefighters safety by ensuring the integrity of their access and egress route.	
Requirement B5: Access and facilities for the fire service	Access and Facilities for the fire and rescue service	ADB Vol2 16.2, 16.3 & 17.9	Hose measuring distances need to be provided with better supporting guidance,	ADB currently states that hose distance should be measured on a route suitable for laying hose. However, this wording is not clear and it is our opinion that further guidance should be provided to take into account the radius of the hose when negotiating bends and when internal layouts are not known. We would recommend that distances are measured from the centre of the walkways, doors and stairs to take into account the radius and a 2/3rds of the distance measure in a direct line (similar to the measurement of travel distance) to account for when the layout is not known.	In order to maintain safe working conditions in a fire scenario, firefighters need to reach all parts of the floor plate with the protection of water delivered by their hose. . The length of this hose will therefore restrict the distance that a firefighter can enter the building. By providing an improved system for measurement should ensure that firefighters can reach all points of the floor plate with suitable protection.	
Requirement B5: Access and facilities for the fire service	Access to buildings for firefighting personnel	ADB Vol1	A requirement should be made for the provision of hydrants for domestic dwellings.	Guidance should be included that details the hydrant provision for individual dwellings and/or where large developments are provided.	Need to ensure suitable water provisions for all buildings.	
Requirement B5: Access and facilities for the fire service	Access to buildings for firefighting personnel	ADB Vol2 Diagram 52 note 2	We question the effectiveness of vents located on external walls of firefighting shafts in high buildings and would welcome further consideration of suitable smoke control provision in tall buildings or deep basements.	Although this provision is not common there is still a possibility to design a tall building with this type of vent which may be affected by external influences such as wind making them ineffective.	This will provide safer firefighting provisions and confidence that the stair will be protected.	
Requirement B5: Access and facilities for the fire service	Access to buildings for firefighting personnel	ADB Vol.2 17.3	Buildings in Purpose Group 7(a) should be considered for inclusion of a firefighting shaft where the criteria of floor height of more than 7.5m and a storey of 900 sq. m. or more in area	Buildings in this category can present similar difficulties in terms of safe access, fire loading, and hazards as those in Purpose Groups 4, 5, 6.	Increased firefighter safety. Currently, potentially hazardous occupancies can be classified as Purpose Group 7(a) and do not	Iron Mountain fire (2006)

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			is met.		attract recommendations for a firefighting shaft.	
Requirement B5: Access and facilities for the fire service	Access to buildings for firefighting personnel	General comment	The entrapment of firefighters due to the premature collapse of cabling has been demonstrated to be a significant risk.	The guidance should make reference to the risk and refer to the relevant provision in BS7671 in this regard.	Ensure that provisions directly related to firefighter safety are included in the guidance in ADB.	Shirley Towers fire 2010
Requirement B5: Access and facilities for the fire service	Basements	ADB Vol2 18.3	Ventilating basements indirectly by opening connecting doors may directly subject firefighters to exceptional temperatures and ultimately put their safety at risk. While this may be reasonable for post fire smoke clearance, it does not support the commentary in B5.ii.e, 18.1 and 18.2 concerning the difficult conditions that may be encountered in accessing basements. Consideration should be given to providing a means for firefighters to ventilate basements remotely and ventilation arrangements should be simple and intuitive.	At present, firefighters have to physically open the doors which puts them directly in the path of the hot gasses. This can also affect the ventilation arrangements within the compartment which could dramatically affect the conditions firefighters are operating in.	Increased firefighter safety whilst operating in complex basements.	
Requirement B5: Access and facilities for the fire service	Basements	ADB Vol2 18.4	Clarity on when basement venting is needed should be provided and this should ensure that interpretation of the guidance is avoided.	Some find the wording of this section confusing and we would advocate that the wording in BS9999 2017: 27.2.1 is adopted instead. The guidance should also ensure that it is understood that sub compartmenting the basement does not impact the need to provide ventilation if the overall floor area is over 200m <sup>2</sup> .	Clarity is required in the guidance to ensure compliance.	
Requirement B5: Access and facilities for the fire service	Basements	ADB Vol2 18.7 to 18.12	Further consideration needs to be given to the suitability of break out panels for ventilation provisions.	A mechanical solution (with its accompanying suppression provision) would represent in most cases, for firefighters, a superior level of protection due to its automatic action and control of the fire development. In our experience break out panels are difficult to locate and allow build up of smoke and heat prior to fire service arrival. We consider that a mechanical system is far more advantageous in the early stages where search and rescue may be needed (in terms of time). Alternatively a natural solution may still be effective for certain basement design but this should not include break out panels as an option in our opinion. Our experience has shown that break out panels can be difficult to locate, difficult to break and may in time have been subject to surrounding pavement works which have impacted the ability to use them effectively.	Review should look to ensure a safer environment for firefighters and the most effective way of venting basement areas.	
Requirement B5: Access and facilities for the fire service	Basements	ADB Vol2 17.2	We are unclear where the 10m depth for a firefighting shaft has been derived from. Firefighting in basements is a particularly onerous scenario and this warrants a full review including the appropriate ventilation provisions to protect the firefighting shaft(s).	Firefighting in deep basements is considered a particularly hazardous environment and therefore the appropriate levels of protection need to be afforded to attending crews. Further clarity around where the depth threshold came from would be appreciated along with guidance that includes greater measures expected where there is a deep basement proposed.	Review to particularly consider the risks for firefighters in deep basements and to ensure that the guidance offers the appropriate standard of protection.	
Requirement B5: Access and facilities for the fire service	Other issues - please specify	Vol1 & Vol2	There is a need to ensure that the appropriate guidance is included in both volumes of ADB.	Although the clarified ADB has not yet been published it is our understanding that flat requirements will be moved to Volume 1. In this regard ventilation provisions should also be included.	Ensure consistency of approach and that the guidance includes all relevant areas	
Requirement B5: Access and facilities for the fire service	Other issues - please specify	ADB Vol2	Further guidance should be included as to where rising main outlets are located. This should accord with firefighting operational procedures.	The location of the outlets should accord with firefighting operational guidance. This needs to be considered as part of the full B5 review we are calling for as the outlet location can be critical in terms of the protection afforded to the staircase in regards to the potential ingress of smoke. This is likely to be impacted by the effectiveness of the ventilation system, where hose lines are running and the presence of active and passive fire safety measures. If it is determined that for residential buildings that the outlets should remain within the staircase enclosure then they should be fitted on the full landings and in a position where the hose is able to move through the door (accounting for hose bend radius etc.)	Part of the full review of B5 but needs to ensure that water supplies are located in a position where they can be both effective for fire crews and minimise any impact on escaping occupants (or any occupants that may be remaining in the building)	
Requirement B5: Access and facilities for the fire service	Car Parks	Vol 1 & Vol 2	The inclusion of car park electrical charging points for electric vehicles is becoming common practice, the guidance documents do not set out any parameters for firefighters to	The car industry is focused on making cleaner fuels for or road vehicles and the design of new residential dwellings are including a large number of spaces dedicated to electric vehicles. This is coupled with other factors such as the ultra low emission zone and other similar drivers for charging points.	Guidance will better reflect modern building design if active measures were given consideration in the guidance	

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			interact with these points in order to isolate the power supply making firefighting safer.	The isolation of these chargers is not discussed within the design document and the inclusion of a remote isolation points should be included in all new design of car parks with electric vehicle charging facilities.	and clarity around expectations in relation to the design for fire fighter safety	
Requirement B5: Access and facilities for the fire service	Other issues - please specify	Vol1 & Vol2	Review of firefighting access design where active measures are proposed as part of the design. Clarity around how these should complement and not hinder attending fire crews would be welcomed.	Designs often include active systems such as fire curtains and suppression systems which may operate during the firefighting phase. This can dramatically affect the conditions increasing the risk to firefighters. We have also received designs where fire curtains are proposed in locations which descend across firefighting routes which will impact the ability of crews to move quickly through a building.	Guidance will better reflect modern building design if active measures were given clearer consideration in the guidance and clarity around expectations in relation to the design for fire service access.	
Appendix A	Performance of Materials, Products and Structures	ADB Vol2 Table A6	Table A6 needs to cross reference 2.26iii Smoke Shafts.	We have had a number of designs where smoke shafts are proposed using combustible materials which is inappropriate in our opinion.	Ensuring the integrity of the smoke ventilation shafts is imperative in maintaining escape routes and protection of the firefighting shaft	
Appendix E	Definitions	Appendix E	Clarity around certain definitions are needed to prevent interpretations that are inappropriate. Inclusion of definitions which are missing from the guidance also.	<p>Examples would include 'remote' in terms of cooking facilities in a kitchen being remote from an escape route (2.13b). There is a clear drive for open plan flat designs to reflect modern living and the accompanying discussions of what 'remote' is.</p> <p>The size of a protected lobby (maximum and minimum) should also be included to ensure that the lobby is sufficient size to provide requisite protection to the staircase.</p> <p>Ancillary accommodation should also be defined as there is reference to the term within the guidance.</p>	To provide greater clarity around the guidance and prevent interpretations on the guidance which are inappropriate	