



17 October 2017

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Title of consultation

## **Call for evidence for the independent review of building regulations and fire safety**

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Organisation

### **Independent Review of Building Regulations and Fire Safety**

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#### **Introduction**

London Fire and Emergency Planning Authority (LFEPA) runs the London Fire Brigade (LFB). The 17 members of the Fire Authority are appointed by the Mayor of London. Eight are nominated from the London Assembly, seven are nominated from the London boroughs and two are Mayoral appointees. The Policing and Crime Act 2017 includes legislation to bring fire and rescue services in London under the direct responsibility of the Mayor of London by abolishing LFEPA and creating the London Fire Commissioner as a corporation sole. This change is currently expected to happen in April 2018.

LFB is the busiest fire and rescue service in the country and one of the largest firefighting and rescue organisations in the world. We are here to make London a safer city and our vision is to be a world class fire and rescue service for London, Londoners and visitors. We will always respond to fires and other emergencies, but our work has changed over the years with a much stronger emphasis now on fire prevention and community safety.

LFEPA is the enforcing authority for the Regulatory Reform (Fire Safety) Order 2005 in London. The Order applies to virtually all buildings, places and structures other than individual private dwellings and relates to fire safety in parts of blocks of flats which are used in common by more than one flat.

#### **Executive summary**

London is a complex city in terms of risks, density, population and building type. As the fire and rescue service for London, LFB has extensive experience of this complicated built environment and how it is regulated. LFB has a role in the building control process, dealing with new buildings when they are being proposed and constructed. LFB enforces fire safety legislation in occupied buildings across the city and provides emergency response to fires and investigates the causes of fires. Through all these roles LFB has an overview of the current state of building regulations and fire safety in the most complex built environment in the UK.

LFB very much welcomes this independent review. LFB campaigns to influence decision makers and politicians to make choices that improve safety and to challenge changes that would increase fire risks or diminish public safety. LFB has raised concern over the quality of construction of some buildings and for a number of years has been calling for a review of the existing guidance on the building regulations. This review is a once in a generation opportunity to shape the systems in place and the guidance provided to better serve the industry, make the built environment safer and protect people from fire.

Although some modifications would be welcome, overall, LFB finds the level and scope of Building Regulations 2010 themselves to be generally appropriate. Of greater concern is that key parts of the legislation are not being followed or enforced. This leads to a poor system which can ultimately fail to protect members of the public and firefighters from fire.

The guidance to support the legislation is lagging behind common practice and modern construction methods and techniques. LFB would like to see this guidance updated to bring it up to date but would also stress that this guidance should be used by competent fire safety professionals and should be designed with that in mind – it would not be helpful to attempt to over simplify this complex subject area.

The current process for planning and building control consultations can lead to the fire and rescue service being consulted very late in the day, in some cases after the building has been completed and occupied. This can lead to inappropriate solutions in place which may remain in a building for its entire lifetime. These issues could often have been resolved very easily earlier in the process.

There is an unhelpful overlap between housing legislation and fire legislation in purpose built blocks of flats. This overlap results in fire authorities only being able to consider certain parts of buildings in terms of fire safety and local authorities being unlikely to consider fire safety at all under the housing legislation which covers a lot of other things too. LFB want to see this overlap resolved in a way which clearly defines the extent of law in these premises.

The most concerning point highlighted throughout this response is that of competency. LFB has noted a decline in competency and skills in the sector, particularly in the last five years. This competency issue relates to individuals and organisations taking part in initial design stages of premises, those assessing and approving designs (including fire authorities), those undertaking building works and making changes to the original design and those carrying out fire risk assessments once the building is occupied.

This submission aims to put forward information to help answer the questions set out in the call for evidence, point to areas where LFB would welcome improvements and provide suggestions for solutions where possible. The table below provides a summary of the key areas this response covers.

<b>Key points and suggestions put forward by LFB on building regulations and fire safety</b>		
<b>Key points</b>	<b>Suggestion</b>	<b>Section number</b>
Legislative framework overall		
LFB find building regulations to be generally appropriate but are not always followed or enforced	Regulations to remain as present with some modifications and more robust systems in place for enforcement over the lifetime of buildings.	1.1
The Housing Act is the primary legislation for fire safety within dwellings however rarely used for this purpose.	Better definition of the interaction between the current legislation; or Make the Regulatory Reform (Fire Safety) Order (the FSO) the primary legislation for fire in all buildings; or Encourage better use of the Housing Act to address fire failings within individual dwellings where appropriate.	1.58-1.62
The number of fire fatalities across the UK have been falling since the turn of the century.	Care must be taken that complacency does not reverse this downward trend.	1.52
There is a need to maintain independence in the role of approving authorities.	Greater clarification on the separation between the enforcement role of fire and rescue services in PAPs, around conflicts of interest for fire service trading arms and around the licencing/ongoing auditing of Approved Inspectors.	2.6 2.13-2.17 5.6-5.8
The complexity of a building is not determined by a single parameter such as height or occupancy group.	LFB would not want to see the introduction of differentiation in the regulatory system between high rise multi occupancy residential buildings and other complex buildings. More guidance on 'super high rise' buildings would be useful though.	8.1-8.6
Building control consultation process		
When BCBs are consulted on one part of a building the legislation does not provide the scope for them to consider how this will affect another part of the building	Increase scope for BCBs to consider the affect of consultation on other parts of a building in the guidance/legislation	1.11
LFB are sometimes consulted too late in the process to have any meaningful impact on design.	Through guidance/legislation increase use of pre consultation with fire authorities; or Align building control and planning processes.	1.12-1.16
Information provided to consultees for consideration of a scheme can vary widely and in some cases is not sufficient.	Clear guidance on what should be expected as part of the consultation package	1.17

Modifications and design changes which affect fire safety occur after approval by the FRA through processes such as value engineering. This means they are not fully considered.	A more robust process to ensure late design changes do not adversely affect safety	1.21 – 1.24
Schemes are approved at planning stage which have inherent issues regarding fire brigade access which it is hard to rectify later. LFB are not a statutory consultee for planning.	Align building control and planning processes; or Make fire and rescue authorities statutory consultees for planning applications; or More detailed information about fire service access to be included within any planning conditions.	1.12 – 1.16
There is variation in the governance of building control application between different areas of the built environment (e.g transport infrastructure, which utilises statutory undertakers).	Instigate a formal requirements to consult with fire and rescue authorities at an appropriately early stage; or Require a third party review of proposals.	1.45- 1.49
Building Regulations require fire safety information to be passed to the user of the building once the building is complete (known as Regulation 38) but this is rarely complied with.	Improve enforcement of Regulation 38, possibly by making it an offence to fail to comply.	1.8 – 1.9
There are no mandatory checks for any fire safety elements during building construction making it difficult to ascertain that items such as cavity barriers are present or fitted correctly once the construction is complete.	Consideration of a more robust process of inspection during construction.	5.9 – 5.10
The FSO relies heavily on the building being built appropriately - however when the construction is inadequate there are limited opportunities for a risk assessor to identify hidden issues.	There are several ways to address this, with the most obvious being ensuring that buildings are built correctly. A requirement for more intrusive risk assessments might be a more immediate solution.	5.11
Approved Document B (ADB) and other guidance		
ADB is not used holistically. LFB see examples where variation from one part of guidance significantly impacts another part of it which is then overlooked.	More clarification in ADB guidance.	1.1

Calls to simplify ADB.	Rather than simplify the guidance, measures should be put in place to ensure that its users are competent fire professionals who meet minimum levels of understanding of the principles of fire safety design before applying the guidance	1.26-1.28
Misunderstanding that ADB is a 'maximum' standard and comparative assessment	ADB should be considered the minimum reasonable standard for safety and more information in ADB to explain why certain solutions are recommended..	1.29 – 1.35
Common misunderstanding that ADB is the actual regulations, rather than guidance.	Improved understanding within the sector is needed.	1.36
Need for a review of ADB	Appendix 1 sets out suggested amendments.	1.37 – 1.39
There are multiple sources of guidance available from industry bodies.	A more regular review of ADB should be considered if BCBs are finding a need to fill an potential gap in guidance. LFB would welcome consideration of the impacts of 'cherry picking' between standards and guidance	1.40 – 1.42
Refurbishment and upgrade of buildings		
Non worsening conditions means that it is hard for. Building Control Bodies (BCBs) insist that when refurbishments occur the general fire precautions are updated to modern standards	Clarify intent and application of this condition in guidance; or Amend condition in light of how it is being interpreted and applied.	1.3-1.7
The FSO can only require maintenance of firefighting facilities but not improvements.	Amend legislation to allow for improvements in otherwise poor firefighting facilities; or Allow increased powers to fire and rescue authority (FRA)/BCB to require improvements in firefighting facilities.	1.10
Skills and competency		
The role of fire risk assessors is vital however their role and competence is sometimes questioned.	Consider how to ensure fire risk assessors are competent which could be by way of a national register.	2.20 4.20-4.23
Fire safety officers should be appropriately competent.	Fire services have introduced a competency framework however this would benefit from third party quality assurance.	4.2-4.5
There appears to be a large variation in the level of expertise in BCBs. LFB have been used as a free third party validation service during the building control consultation process.	Building control bodies should be competent to understand and review all aspects of a design, or they should employ a competent third party to review on their behalf. Benchmark standards might also help. .	2.18-2.20

A 2017 report by Meacham Associates considered the situation in Scotland. Many of the findings of this report are equally applicable to England.	This review should consider the findings of the Meacham report to determine if those findings and the recommendations are appropriate for England.	4.7-4.8
There is no restriction on who can undertake a detailed fire safety design, and LFB sometimes see evidence of designs undertaken by those who do not appear to be sufficiently experienced or qualified.	Consideration should be given to similar standards such to that of structural engineers being applied to fire engineers.	4.9 – 4.11
The competence of contractors could contribute to failings in compartmentation in buildings.	Consideration should be given to contractor competency and how to raise the standard throughout the industry.	4.12-4.13
Many life safety systems have no requirement for formal qualifications.	A long term aspiration could be to require minimum qualifications for contractors. A short term solution could be for contractors to be part of an appropriate trade/industry body which has an appropriate means of assessing competency.	4.14-4.17
The competency concerns equally apply to statutory undertakers, and could arguably be more critical given there is no requirement to consult with a BCB.	Benchmark standards required for BCBs could also be extended to those providing fire safety guidance for statutory undertakers. Due to the scale and complexity of these projects a requirement for third party review could also be appropriate.	4.18-4.19
Regulatory Reform (Fire Safety) Order (FSO)		
FSO guidance over 10 years old and during this time guidance from elsewhere in the sector has been developed.	Review and brand all current guidance for premises that the FSO applies to, in order to provide clarity. This should be done though consultation with all user groups.	1.63-1.66
It is not always clear who has responsibilities to comply with particular requirements of the FSO.	Consider a requirement to produce a document detailing who has particular responsibilities for life safety in high risk premises.	3.1-3.2
Fire and rescue services use informal notices and/or action plans to work with building owners to improve the safety of their buildings. In London these are called notification of deficiencies and 700 are issued on average each year.	A more statutory footing for this level of notice and for them to be specified on the risk to particular individuals using buildings.	5.16

Building Regulations roles and responsibilities		
There is lack of clarity on who has responsibility for compliance.	Consider the benefits of CDM 2015 framework for detailing roles and responsibilities.	2.1 – 2.5
There is concern regarding design and approve scenario ('one stop shop') used by some Approved Inspectors.	Regulation 9 of the Building (Approved Inspectors etc.) Regulations 2010 seeks to avoid this but stronger guidance is required.	2.6 – 2.15
Building performance standards are not always being adhered to, and those setting the standards are sometimes also responsible for enforcement.	Consider how the building performance standards are being applied, and if the current audit and enforcement model is appropriate.	2.16 – 2.17
Building control bodies do not always have the required knowledge and experience and do not always employ third party specialists when this is the case.	Consideration should be given to formalizing when and where a third party report/review is required, and who is competent to undertake such work.	2.18 – 2.20
Whilst the introduction of Approved Inspectors has provided competition which has advantages, there is also a suspicion that this has led to a reduction in site visits in some cases.	Review the appropriateness of the building performance standards and consider if other requirements would assist.	2.21
There are sometimes parties with responsibilities within the FSO who are not aware or who do not understand their responsibilities.	Consideration should be given to the regulation of the role of a fire risk assessor, particularly for high risk premises and/or additional guidance for responsible persons and the contractors they employ.	2.22- 2.25
Quality assurance and testing of materials		
Products being used which are marketed with claims of passing fire safety tests but without providing detail around the testing.	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.	7.1
Products are not always tested with the most appropriate test and sometimes full assemblies are not tested.	Consider a national requirement to have products and services tested fully with a national (or international) register of tested and approved fire safety products, including the details and results the testing.	7.2 – 7.8
Many fridges and freezers are now made of plastic and insulated with polyurethane foam and are on 24/7. Flame spread on a plastic back panel	Test should take into account the fuel loading that commonly exists in homes.	7.9 – 7.121

could be as fast as one centimetre per second.		
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### **About the authors**

**Lynsey Seal** is the joint head of LFB Fire Engineering Group and is a Chartered Engineer with the UK Engineering Council. A qualified mechanical and fire engineer, Lynsey joined LFB in 2004 and has extensive experience within the Building Regulations consultation process taking the fire engineering lead for LFB on major projects including the Athletes' Village for the London Olympic Games and the Stratford City development.

Lynsey is the vice chair of the Institute of Fire Engineering (IFE) special interest group for competency and ethics and sits on the IFE Registrants Group committee. She also represents LFB on liaison groups with both London District Surveyors Association (LDSA) and The Association of Consultant Approved Inspectors (ACAI).

**Gareth Steele** is the joint head of the Fire Engineering Group at LFB. Having worked in LFB Fire Safety Regulation for over thirteen years, Gareth began his fire safety career as a Fire Safety Inspecting Officer, a Fire Safety Team Leader and then moved to LFB Headquarters in the Policy and Enforcement Team before joining the Fire Engineering Group.

Gareth sits on the National Fire Chiefs Council (NFCC) Fire Engineering Technical Standards (FETS) group, and on advisory committees for several research projects. He sits on various BSI parent committees including Fire Safety Engineering (FSH/024), Fixed Fire Fighting Systems (FSH/018) and Smoke, Heat Control Systems and Components (FSH/25), and several subcommittees along with other industry guidance committees such as the Smoke Control Association (SCA) guidance on tall single stair offices guide which is currently in draft. He is a member of the IFE Special Interest Groups for Fire Resistance and Computational Fluid Dynamics. Recently Gareth has drafted and reviewed national guidance relating to remedial and interim measures on tall buildings containing combustible cladding.

**Nick Coombe** is the LFB Management Support Officer and Nick's 36 years' service which includes 23 in Fire Safety for the London Fire Brigade has spanned many roles including Inspecting Officer, Team leader, Head of Fire Safety Training, Enforcement Manager and Head of Fire Safety Policy. He has directly supported the development of DCLG guides and as the Chair of NFCC RRO working group is the lead for the production of policies and guidance on the RRO to UK fire and rescue services. Nick is also the current Vice chair for NFCC Protection and sits on the Fire Risk Assessment Competency Council and BSI Standard. He is the IFE Vice Chair of their Fire Risk Assessment Register.



## The overarching legal requirements

**Q1** To what extent are the current building, housing and fire safety legislation and associated guidance clear and understood by those who need to follow them? In particular:

- What parts are clear and well understood by those who need to follow them?; and, if appropriate
- Where specifically do you think there are gaps, inconsistencies and/or overlaps (including between different parts of the legislation and guidance)? What changes would be necessary to address these and what are the benefits of doing so?

### **LFB Response**

The extent to which the current legislation and guidance is clear and understood is highly dependent upon the competence of the user. While this might seem an obvious statement it is important because there is a wide range of levels competence within and between the different parties involved in this area. This is discussed in more detail within Q4 of this response.

#### *Building Regulations overall*

- 1.1. In terms of the Building Regulations there is sometimes a lack of appreciation that satisfying one element of the Regulations can jeopardise another. For example, satisfying requirements for Part L (conservation of fuel and power) needs to be considered in conjunction with Part B (fire safety) so there is no conflict. This means the design needs to be considered holistically. It is LFB opinion that the Building Regulations are clear, this may not be the case for other parts of the industry.
- 1.2. One of the key advantages of the functional requirements of the Building Regulations is that they allow for innovation within the design development. LFB would not like to see this change. The functional nature does however rely on them being competently considered and applied and we are aware of alternative interpretations being placed upon them even amongst Building Control Bodies (BCBs).

#### *'Non worsening of conditions'*

- 1.3. There is 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.
- 1.4. 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 improved up to modern standards.
- 1.5. Reliance is placed on the FSO, but it may be that the relevant precautions are 'hidden' by construction and never seen post build and so are not included in the FSO audit process.
- 1.6. An example would be a staircase enclosure which as-built (mid 1960's) was provided with a nominal 30min fire resistance. Modern standards would expect two hours fire resistance, yet despite works being undertaken to the partition, no upgrades were considered necessary by the BCB.
- 1.7. In some of the most concerning cases, non worsening is sometimes applied whereby had the building been occupied at the time of the consultation, LFB would have undertaken

enforcement action under the FSO. Despite this, as far as the BCB is concerned, the existing condition is still considered to be the base standard for measuring compliance with the Building Regulations. We believe that this leads to inconsistency and a wide interpretation of the standard that should be met. Issues can be encountered where the traceability on the 'existing' condition can be an issue and therefore a closer alignment between Building Regulations and FSO on this matter would be beneficial. Consideration should be given to the need for a fire risk assessment to be undertaken on any existing conditions and the outcome of this review could therefore be used as the benchmark for any future development.

#### *Regulation 38*

- 1.8. Building Regulations 2010 (Regulation 38) requires that fire safety information is passed from the person carrying out the works to the responsible person once the build is complete. The LFB experience is that this is often not done well, and there is little if any evidence of enforcement action taken when it hasn't been undertaken appropriately. Consideration should be given to make it an offence under the FSO not to pass on suitable and sufficient fire safety information. This would require consideration of the interactions between the different legislations. An alternative would be more enforcement on compliance with Regulation 38 as it stands.
- 1.9. LFB are aware that the BCB, in many cases, does not review or see the content of the Regulation 38 package of information. Their approach is to get a signed undertaking from the person carrying out the work that they will pass this information to the responsible person. LFB are not convinced that the process is robust, nor that there is the appropriate level of compliance with Regulation 38.

#### *Fire service access and facilities –Building Regulations and the FSO*

- 1.10. A further issue that requires consideration is in relation to firefighting facilities and the scope of both Building Regulations and the FSO. Article 38 of the FSO can only ask for *maintenance* of firefighting facilities and cannot require improvements to them due to firefighters not being considered relevant persons under the FSO. Therefore when designs are approved in relation to ADB B5, which do not offer the correct level of protection for firefighters, FRAs have little further power to require changes. If we consider this in context of an expected building's life span, which can be anywhere from several years to several hundred years, this is a long time for the building to have potentially inappropriate firefighting facilities. Firefighting lifts are one example; an older style fireman's lift may not have many of the latest safety features such as dual power supplies yet under Building Regulations, even if a refurbishment were to include changing the lift cars, then the non worsening condition could still be applied. Dependent on the circumstances, these could pose potential ongoing inherent firefighting safety risks due to the loss of opportunity to upgrade facilities to modern standards.

#### *Reach of consultation and impact on general fire precautions*

- 1.11. The reach of consultation can also present an issue in terms of overall general fire precautions within a building. For instance, a BCB may have an application for refurbishment of a percentage of the total floors in a building. While consultation under the Building Regulations may be limited in scope to these floors, from an enforcing authority perspective the LFB interest also includes the impact any changes might have on the rest of the building. An example would be a consultation on the addition of one floor onto a building which results in the need for protected lobbies to be provided

around a protected staircase. In this case the BCB may require that a lobby is provided on that floor being consulted on, but there is no scope to insist on lobby installation on any other floor level if these fall outside the scope of the application.

#### *Consultation process and procedural guidance*

- 1.12. There are areas within the consultation process which, from our experience, do not always achieve the intended aims of the procedural guidance i.e. to seek mutually compatible views and prevent the need for any extra building work to be undertaken at the end of the building project.
- 1.13. LFB are often consulted too late in the design development to have any meaningful influence on the design, however it is noted that procedural guidance suggests that BCBs should consult only once they are minded to approve (unless preliminary design advice has been sought).
- 1.14. A late consultation often manifests itself in issues such as inappropriate access provided for firefighting, which may have been agreed at the planning stage and dependent on any restrictions placed on this stage it may therefore be difficult to change at building regulations stage. For example, some residential schemes are developed at planning stage with no vehicular access within the site. This then poses significant issues for LFB appliances and personnel which should be able to get within a reasonable distance of any accommodation.
- 1.15. LFB have noted and seen late consultation used as a tactic, effectively presenting a fait accompli in an attempt to force LFB to 'accept' that any significant change to the design is not possible or unreasonable.
- 1.16. More use of the pre-consultation informal advice or consultation at planning stage would be beneficial, and/or perhaps the planning and building control process be more closely aligned when there are schemes which will pose issues for fire service access. More engagement at pre-consultation stage would bring new challenges in terms of implementation and resourcing from the fire service perspective which will need to be carefully considered. A cost recovery scheme based on time spent could be introduced.

#### *Consultation information*

- 1.17. The consultation package of information can vary widely in terms of content and this will often relate to the nature of the building works. Simple drawings and a short explanation of proposals can suffice for some projects or for more complex schemes a full fire strategy with detailed drawings might be necessary. There is however no clear guidance on what should be expected as part of the consultation package and while BCBs may be intimately familiar with schemes through their ongoing involvement often the consultation with LFB may only occur once as part of the process. Therefore the information provided needs to have sufficient detail to enable observations and comments to be provided.
- 1.18. LFB have recently developed a guidance note on how we would like to be consulted and are encouraging use of the Building Control Alliance consultation pro-forma document to try and achieve some level of consistency. The pro-forma document provides information from the purpose group through to the height of the building and scope of the consultation being submitted. It also includes detail on the BCB approval status which is important as we have received consultations which the BCB had themselves rejected.
- 1.19. Often the construction method is not identified to LFB during the consultation stage, despite requests for the information. The use of modern methods of construction (in particular cross laminated timber or modern timber construction) are of particular interest

as this can allow us to consider fire risks during the construction phase and involve colleagues from HSE in discussions.

- 1.20. The use of building information modelling (BIM) may offer an opportunity for LFB to better understand the design development and will provide information that currently often missing from the consultation package. There a question as to how fire and rescue services will handle and review information being submitted in this format. Procedural guidance still refers to hard copies and several fire and rescue services, including LFB, are still developing methods of electronic consultation. This does not currently include consideration of BIM.

*Modifications and value engineering*

- 1.21. For the majority of cases LFB do not see the 'as built' fire documentation therefore what might have been considered acceptable at Building Regulations consultation stage may have changed significantly at final build and there may have been a lack of further formal consultation. It may be an undue burden to require a process of re-consultation, but there should be a robust process to ensure that any design changes do not adversely affect the fire safety design especially if, for example, 'value engineering' or a site specific security strategy has been adopted at a later stage in the process.
- 1.22. Value engineering is a process of examining alternative products/services to eliminate any unnecessary costs, in order to achieve value for money on a project by amending, changing or updating the design. It is a perfectly appropriate approach but it should never reduce the adequacy of a given solution which often happens by considering elements in isolation.
- 1.23. Value engineering can have a detrimental impact of the fire safety design if done on an ad-hoc basis and without the involvement of a fire safety professional. LFB have seen examples where value engineering has been considered for one property of a given product (e.g. the thermal performance of an insulation material) overlooking, and to the detriment of, the expected fire performance. For example, the use of combustible insulation materials which have provided an economical solution to a thermal performance requirement however has not satisfied the requirements for Schedule 1 Part B4 of the Building Regulation 2010.
- 1.24. Where modifications have occurred then there may be a need to re-consult but right now the parameters on when to re-consultation would be expected are not always clear. LFB would like to see this reviewed, considering circumstances such as substitute materials being used which may be critical to the overall fire safety design strategy.

*Approved Document B Volume 2 – Buildings other than dwellinghouses (ADB)*

- 1.25. Approved Document B, Volume 2 was updated in 2013 but its last major technical update was in 2006 and it is in need of a review which considers many areas of the guidance. Consideration needs to carefully be given to the scope and intended users of the guidance prior to any change of the content. This will allow any changes to be undertaken with proper context. Whilst many of the issues below can be linked to the competency of those using the document, a full review of ADB and inclusion of new commentary to deal with emerging issues would improve standards.

*Reject calls for oversimplification of ADB*

- 1.26. LFB have seen a desire from architects in particular, to simplify Approved Document B(ADB) to make it more accessible such that it can be used by someone with limited fire safety knowledge. This has been evident in LFB discussions with bodies such as RICS and the Fire Sector Federation. Fire safety and fire engineering is such a complex area

that it should only be undertaken by individuals with the right level of competence and simplification of the guidance is not the right approach. LFB consider competence to be a balance between appropriate qualifications, knowledge and experience. To use ADB properly requires a full appreciation of the principles of fire safety design and an understanding of how the guidance has been developed and should be used.

- 1.27. There are areas within ADB which have been identified as being either misunderstood or misapplied, section B4 (external fire spread) for example, but further clarification - rather than simplification - of those areas is what LFB would welcome.
- 1.28. Having an appropriate level of knowledge is also important in terms of understanding the impact that satisfying one element of ADB may have on another (e.g. for B1 needs to be considered in conjunction with B5).

*Misunderstanding that ADB is a 'maximum' standard and impact of comparative assessment*

- 1.29. In terms of ADB, LFB experience it is often deemed to be the 'maximum' level in terms of benchmarking a fire safety design as it is considered to represent the level of risk acceptable to society.
- 1.30. Due to the nature of the regulations the design may be developed by way of an inappropriate comparison with ADB. This comparative assessment is not always appropriate and in some cases ADB would offer just the minimum reasonable standard. There is a need for professional judgement as part of the design development when considering a comparative assessment.
- 1.31. There are solutions within ADB for which subsequent research has shown to demonstrate potentially less favourable levels of safety than previously thought, or at least results in limitations on where they should be applied. For example, the use of an automatic natural openable vent to ventilate a common corridor. Research has shown that this type of vent may be vulnerable to wind conditions negating their performance in certain circumstances.
- 1.32. In these cases new knowledge/understanding should not be ignored or dismissed and should also be considered when applying a comparative assessment. Often British Standards will address these areas but without a substantial review of ADB, such items as these have remained in that document. For example, BS9999 now places a limitation on the height of a building where a natural automatic vent might be appropriate.
- 1.33. Similarly, some designers are open with their opinion that they are only expected to design to the minimum to achieve compliance with the building regulations, rather than the fundamental expectation of seeking the acceptable level of safety.
- 1.34. Other bad practice has been observed where some take the view that by omission from ADB a solution is appropriate (i.e. ADB doesn't say I *can't* do this therefore I can). LFB does not believe this to be the case.
- 1.35. In certain cases provisions within ADB can be completely ignored such as ADB 1.3 relating to provisions for sheltered housing. Whereby additional detection levels are advised to be considered where it is known that vulnerable persons are likely to be present.

*Misunderstanding about status of ADB*

- 1.36. LFB have seen a misunderstanding that 'compliance' with ADB is all that needs to be demonstrated - without cross reference back to the Building Regulations. This may be a misunderstanding of the Regulations and/or the status of the Approved Documents in relation to these. It is a common mistake for people with differing levels of expertise to consider ADB as being the building regulations rather than a guidance document on how

to comply with the functional requirements of the regulations for common buildings types.

*Overall need for a review of ADB*

- 1.37. ADB may also benefit from further explanation as to the basis behind an expected solution in the guidance. LFB officers are often faced with a proposed variation from the guidance which we believe may be linked to the designers lack of knowledge as to why a particular expectation, such as an explicit limitation in height, is recommended. For example it is sometimes not appreciated that such a height limitation is linked to firefighting operational tactics and equipment, and that there is therefore little allowance for extending a height which is linked to the reach of a firefighting ladder for example.
- 1.38. In terms of the content within the guidance itself, Appendix 1 provides a more detailed list on what aspects of Approved Document B Volume 2 (ADB) LFB would like to see reviewed, although this list is not exhaustive. This list has been compiled for some time awaiting the review of ADB and is likely to need further review in light of recent high profile incidents.
- 1.39. During the consultation process for the removal of the local Acts, and in particular London Building Acts (section 20) in 2013, LFB called for a full review of ADB. Of particular concern was that the removal of Section 20 which resulted in a percentage of London buildings being constructed without the sprinkler protection this Act formerly required.

*Other industry guidance*

- 1.40. Bodies such as LABC, LDSA, NHBC and BCA publish their own technical guidance which appears to represent interpretations of ADB and suggest routes to compliance. LFB are unclear as to the technical review process for these policy notes and what status these have. A more regular review of ADB might be needed if BCBs are regularly finding a need to fill an potential gap in guidance.
- 1.41. LFB would welcome consideration of 'cherry picking' between standards and guidance. While this can be positive and lead to a fire safety design that has considered multiple sources of information, it could also be a negative driver towards a lesser standard of safety. The wording used in the foreword of BS9999:2017 should be considered in relation to this matter. It currently advocates a method where the impact of a 'pick and mix' approach needs to be evaluated.
- 1.42. In respect of fire safety design it is noted that there are often multiple sources of guidance and related standards this can lead to a complexity which is often unhelpful. Better consolidation and alignment would be very beneficial.

*Planning*

- 1.43. As mentioned above, LFB are not statutory consultees for planning applications, however often schemes are approved at planning stage which have inherent issues regarding fire brigade access. These inherent issues are then accepted by the design team when seeking Building Regulations approval, and ultimately presented to LFB very late in the design stage with little scope for design changes.
- 1.44. A solution might be to have further alignment with planning and Building Regulations stages, or alternatively make it advisory to consult the LFB during planning approval stage where fire service access is unlikely to comply with the guidance in ADB B5. Alternatively more detailed information about fire service access needs should be included within any planning conditions.

### *Statutory Undertakers*

- 1.45. There is a significant anomaly within existing fire safety legislation associated with Statutory Undertakers. Statutory Undertakers are responsible for elements of the built environment including (but not limited to) transport infrastructure, utility distribution and public health infrastructure. It is worth noting that at the time of the Building Act 1984, the Statutory Undertakers were essentially government bodies and therefore it could be questioned, following denationalisation, whether the consultation requirements have kept pace with the bodies responsible for this role today.
- 1.46. A key area of concern is associated with transport infrastructure where multi million pound projects (such as Crossrail) are not subject to the same governance associated with the Building Regulations consultation process as other parts of the built environment.
- 1.47. The FSO applies to transport premises when they become operational but the FSO does not explicitly require Statutory Undertakers to consult BCBs or the relevant fire and rescue authority at design stage. As Statutory Undertakers are normally exempt from having to make an application to a BCB there is no formal mechanism for consultation to take place. Statutory Undertakers often opt to consult Fire and Rescue Services direct as a matter of best practice however, this varies in terms of when this is carried out and in the level of detail.
- 1.48. There are a number of factors driving the need for clear legislative direction for Statutory Undertakers to consult with Fire and Rescue Authorities. These include :
  - Key design parameters for major infrastructure projects are often constrained early in the concept design stage due to the site or public opinion during public consultation. A failure to consult the LFB adequately at an early stage limits the possibility of rectifying deficiencies in the fire safety design as a project progresses. This may result in infrastructure that does not adequately facilitate Fire and Rescue Service operations or comply with the Regulatory Reform (Fire Safety) Order 2005 or Fire Precautions (Sub-surface Railway Stations) (England) Regulations 2009. This reflects the same issue experienced within consultations on the general built environment detailed within this report.
  - Under the Fire and Rescue Services Act 2004 the LFB has a duty to obtain information, train firefighters and obtain sufficient personnel, services and equipment. It may be impossible for a LFB to carry out these duties without being adequately consulted on the design of the infrastructure.
  - There is a benefit to the standardisation of key firefighting provisions across all of the built environment to assist firefighters in effectively responding to incidents on transport infrastructure. These recommendations could be conveyed at consultation meetings.
  - LFB can contribute their experience of other projects, including auditing fire safety compliance on existing infrastructure and of emergency response to new projects. This input could assist with effective fire safety engineering design and result in savings of time and cost across a project.
  - The Statutory Undertaker can provide information to the LFB about matters such as innovative construction techniques, fire protection technologies and emerging hazards in the transport environment which can assist the LFB in their objectives of saving life, protecting assets and reducing the impact of emergencies on business continuity.
- 1.49. Due to the lack of a formal consultation process a requirement for an independent third party review of transport infrastructure proposals (such as a BCB) as recommended for the majority of the built environment might also be appropriate due to the scale and

complexity of these projects. While there is evidence of good practice in this respect within this sector the level of engagement is not always consistent.

- 1.50. As the petroleum enforcing authority for London, LFB are also meant to be consulted under the Petroleum (Consolidation) Regulations 2014. There is a timescale detailed within these Regulations however this is not always complied with, or indeed, in some cases, no consultation occurs. These Regulations are due for review in 2019 where representation will be made to make the consultation process more explicit.
- 1.51. This is needed as there is minimal action that can be taken with regards to this issue. At present the only real sanction is for LFB to not issue a certificate for petroleum storage or issue a prohibition notice if the site begins to operate.

*Regulatory Reform (Fire Safety) Order (the FSO)*

- 1.52. There is a clear downward trend in non-dwelling fires since 2002 and a clear downward trend in fire fatalities since around 1985. The Fire Precautions (Workplace) Regulations were introduced in 1997 and these ran seamlessly into the FSO which was implemented in 2006. It could be presumed that this legislation led to the downward trends in fires and fatalities, but this is not proven. There are other factors such as reduction in smoking and The Furniture and Furnishings (Fire Safety) Regulations 1988 (as amended in 1989, 1993 and 2010) which could have influenced these trends.
- 1.53. The FSO is written with the aim of allowing the operators of small business, who were familiar with their premises and business operations, to do their own fire risk assessments. However, certain premises, due to their risk and complexity, do need suitably competent people with the appropriate fire safety expertise to be involved.
- 1.54. Since the introduction of the FSO in 2006, successive Governments have had stated policies to reduce red tape with the aim to not allow regulation to hinder growth<sup>12</sup>. This, coupled with the reduction of fires and fire deaths may have led to complacency amongst both business and in some cases fire services and the Government. Care must be taken to ensure this complacency does not lead to a reversal of the reduction in fire deaths/injuries trend.
- 1.55. The issue of a lack of regulation is discussed in a briefing by Professor Tombs for the Centre for Crime and Justice Studies dated April 2016. This briefing note, entitled "'Better Regulation': Better for Whom?", highlights the experience of enforcing authorities in terms of regulation of pollution, food safety and workplace health and safety standards and that parallels with the experience of the fire service.
- 1.56. The biggest gap in this legislation which was designed to look at workplaces is in the protection from fire of those in residential premises including tower blocks, "sheltered accommodation", "extra care" schemes, or vulnerable persons receiving care in their own homes. Most people die or are injured from fires in their own homes, i.e. premises which are not covered by the FSO (as demonstrated by the fire statistics). Even within blocks of flats (and similar properties) it is very rare for people to die in flats other than the flat of fire origin. However, certain fire incidents have demonstrated that if there are failures in compliance then multiple deaths, within, and beyond, the original point of fire origin, can occur.
- 1.57. Further enforcement guidance was due to be produced by the Secretary of State for Communities and Local Government following the Lakanal House Rule 43, but this has not been published. This has meant that the responsible persons for these residential

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<sup>1</sup> <http://www.redtapechallenge.cabinetoffice.gov.uk/themehome/health-and-safety-spotlight/>

<sup>2</sup> <https://www.gov.uk/government/publications/regulatory-reform-fire-safety-order-2005-focus-on-enforcement-review>



premises have been relying on guidance documents for the two regimes; FSO and the Housing Act but without defining the scope of either.

#### *Housing Act*

- 1.58. The Housing Act is the primary fire legislation for domestic premises, through the Housing, Health & Safety Rating System (HHSRS) The LFB experience is that Local Authorities rarely use the HHSRS for fire safety on anything but a House of Multiple Occupation (HMO), often because they have very little experience and expertise in fire.
- 1.59. Examples of this are :
  - Case study 1: Premises was found to have dangerous conditions in the residential areas above a takeaway shop. The situation clearly warranted the issue of a Prohibition Notice. LA enforcement officers who were on site agreed that it was their lead however they didn't have the expertise or, in their opinion, powers to issue immediately. LFB issued notice in this instance.
  - Case study 2: premises is a disused public house that has been adapted for residential use and was being occupied by nine families. The LA would be the lead for this premises as it was wholly residential. Again, due to a lack of action by the LA, enforcement officers LFB used again issued a notice.
- 1.60. There is a need to ensure the overlap and distinction between Housing Act and FSO is much clearer. This will be significantly assisted by the inclusion of a clear definition of what is meant by "used in common". For example, is a wall between two flats covered? What about the external façade? Is the flat front door part of the common parts?
- 1.61. There should also be much better collaboration between regulators including housing enforcers, BCBs, and the Health and Safety Executive (HSE). There should be more formal arrangements established to ensure adequate enforcement takes place. There may also be a need to consider that certain premises should have a single enforcement regime for fire (i.e. not having the overlap between the FSO and the Housing Act).
- 1.62. LFB have also seen a reluctance by Housing Authorities to act and an apparent misunderstanding of their powers which, for several years, were interpreted as only applying to Houses in Multiple Occupation (HMOs). There has also been a reluctance to use the HHSRS due to the view that all 29 hazards (of which one is fire) must be addressed rather than being able to act in a thematic way. This results in the HHSRS being considered cumbersome, time consuming and bureaucratic.

#### *FSO Associated Guidance*

- 1.63. The original suite of fire safety guides issued by Government are now over ten years old and have not been reviewed. This has not supported either the responsible person (as defined in the FSO) or other parties that use this guidance.
- 1.64. Since the guidance was first published, the fire sector has produced its own guidance on housing. These include: LACORS – fire safety, Fire safety in purpose built blocks of flats and the National Fire Chief's Council (NFCC) guidance on specialised housing. This raises concern over whether these industry produced guidance is classified as guidance under Article 50 of FSO and if not, whether responsible persons or enforcers have to follow them.
- 1.65. The Purpose Built Blocks of Flats Guidance were published in 2012 by the Local Government Association following the fire at Lakanal House. LFB are aware that the LGA have considered withdrawing this document post the Grenfell Tower fire which would have left the tower block sector with potentially no guidance. If this had been Government issued Guidance, rather than industry sector lead, then this could not have been done.

1.66. It is our opinion that the Government should review and brand all current guidance for premises that the FSO applies to and that this should be done in conjunction with all sector users. In addition, Government need to have independent fire experts to call on for any technical support This could potentially be the role of the new Her Majesty's Inspectorate of Constabulary and Fire & Rescue Services (HMICFRS).

## Roles and Responsibilities

**Q2** Are the roles, responsibilities and accountabilities of different individuals (in relation to adhering to fire safety requirements or assessing compliance) at each key stage of the building process clear, effective and timely? In particular:

- Where are responsibilities clear, effective and timely and well understood by those who need to adhere to them/assess them?; and, if appropriate
- Where specifically do you think the regime is not effective?
- What changes would be necessary to address these and what are the benefits of doing so?

### **LFB Response**

- 2.1. Building Regulations provide clarity on what type of work needs to comply with schedule 1 of the regulations but there is a lack of clarity on who has responsibility for compliance. Other legislation, such as The Construction (Design and Management) Regulations 2015, appear to provide a better framework for detailing roles and responsibilities which could be considered for comparison.
- 2.2. There is a need for clarity on roles and responsibilities such that there is no ambiguity and that a reassurance is provided to the client that once a final/completion certificate is issued the building complies with the Regulations. This will then allow the responsible person for FSO to develop their fire risk assessment from a sound starting point.
- 2.3. More engagement of fire safety professionals who developed the design through to the completed construction would be significantly beneficial. This would allow them to not only ensure that their original design was implemented but also to consider any changes or development in the design and assess the impact of these.
- 2.4. Cases such as Priory Hall in Ireland highlight the impact of a system where 'light touch' Building Regulations coupled with poor quality construction. There is now an increased accountability for professionals signing off on new buildings through The Building Control (Amendment) Regulations 2014.
- 2.5. LFB have evidence of projects that can be presented where the quality of the construction undertaken is extremely poor and that this is not isolated to one developer or one BCB. Fire and rescue services across the country are also likely to have similar evidence from discussions with other members of NFCC Fire Engineering and Technical Standards committee.

#### *Building (Approved Inspector etc.) Regulations 2010 (as amended):Regulation 9*

- 2.6. There is a growing concern amongst the fire engineering industry about the independence of Approved Inspectors relating to the possible 'design and approve' scenario which we understand Regulation 9 of the Building (Approved Inspectors etc.) Regulations 2010 seeks to avoid. Stronger guidance and more clarification is needed to ensure the independence of the approving authority.

#### *Design responsibility and independence*

- 2.7. The concerns are primarily related to the grey area which exists when the line between design and approval has been crossed. In this, and the case of a 'one stop shop' scenario, there is a question to answer on how robust the overall approval process is and whether the integrity of the process has been maintained.

- 2.8. One of the key areas that should be clear to all parties is the question of who is responsible for the design (and subsequent liabilities). There are a number of related areas to consider:
- Should an approving authority be making design suggestions themselves and where is the line crossed from advice to actual design?
  - What type of design considerations should be referred back to the design team?
  - Does a 'fire safety appraisal report' constitute a design document if it details departures from the guidance within Approved Document B?
  - Is it acceptable for the Approving Authority to use their own judgement to justify an area of 'non compliance' where there has not been a justification provided from the design team?
- 2.9. LFB experience is of an increasing number of cases where more complex fire safety designs appear to have been created by a team made up of a client, an architect and the Approving Authority with no fire engineer involved. This begs the question of how the fire engineered/alternative design solutions have been reached without any input from a fire safety professional responsible for the design?
- 2.10. This experience is also encountered on more standard consultations where there are certain departures from guidance such as ADB. LFB have been involved in consultations where it appears to be the BCB justifying these departures and, in our opinion, crossing the line in terms of maintain their independence from the design. Because of the grey area that currently appears to exist in terms of design/advice at present questioning this approach is often difficult for LFB.

*The 'one stop shop'*

- 2.11. Other examples LFB have seen relate to where the BCB are within a company group structure that also offers fire engineering services. This poses a real potential for conflict of interest.
- 2.12. LFB have been monitoring the level of third party peer review which takes place on specialist engineering analysis, such as computer modelling submissions. The level of review varies greatly, however a particular practice has become apparent that for some Approving Authorities who are part of a 'one stop shop' that provide in house fire engineering services.
- 2.13. This is where Approved Inspectors employ a third party to provide a technical review on a submission from a fire engineering consultant in many cases *unless* it was a submission from their 'sister' or 'in house' fire engineering company. In these cases an independent review would not be undertaken and a statement from the Approved Inspector (AI) would be provided to say that it was generally satisfactory without any technical commentary.
- 2.14. This brings into question the level of scrutiny applied to design submissions that have been produced by fire engineering consultants that form part of the one stop shop with the Approving Authority and whether this is effectively moving towards a process of self-certification.

Below is an image taken from a website from a company that operates a 'one stop shop' where it specifies one benefit of engaging them as 'No rejections No delays';

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We aim to establish lasting relationships with our customers by exceeding their expectations and gaining their trust through exceptional service.

Head Projects Building Control Ltd is an independent consultancy with a multi-disciplinary practice utilising the expertise of professional Surveyors, CDM Co-ordinators, Fire Risk Assessors, Party Wall Surveyors, EPC Assessors, Access Auditors, Environmentalists and Structural Engineers to advise clients on projects nationwide.

- Nationwide Coverage
- Proactive approach to projects
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### *Self-certification?*

- 2.15. The risk assessed approach as to what is reviewed on a consultation has also been referenced by certain approving bodies and statements such as 'if the submission has come from 'x' company then we know it will be ok' are also being made. The difficulty with this approach is the actual competence and experience of the fire engineer in question doesn't appear to be checked. LFB fundamentally disagree with this approach. LFB have numerous examples where so called reputable consultancies have made significant errors in their fundamental approach or detailed analysis.

### *Building performance standards*

- 2.16. The risk based approach to reviewing consultations appears to be advocated by BCBs and while we appreciate that the level of knowledge and scrutiny of designs will vary from project to project it is clear to us that the building performance standards are not being adhered to in all cases. We have direct experience of BCBs clearly not having the expertise to understand fire safety designs from projects ranging from more straightforward proposals to complex design proposals.
- 2.17. There is a need to consider if the effectiveness of the building performance standards is impacted by the self-regulation of both local authority building control and Approved Inspectors. The current situation is that those setting the standards can also be responsible for their own enforcement - this should be reviewed.

### *Third party review*

- 2.18. One of the key areas which relates to our point on self-certification above is the failure to employ a suitably competent/qualified third party where the BCB does not have sufficient in house expertise to review a submission. Common examples are the use of computational fluid dynamics (CFD) or structural fire protection which require high level technical understanding to enable an appropriate level of scrutiny. The expectation is then placed on other bodies such the fire and rescue service for advice and guidance and has lead to certain fire services, such as LFB, being seen as a free third party review service.
- 2.19. Similarly, we have noted an inconsistent level of scrutiny by BCBs and seen examples of them accepting calculation method simply based on who has presented it to them, without challenge. A common example is the use of in house spreadsheets which tie together a large number of basic fire calculations - Approving Authorities have accepted the results of these without scrutiny simply because they were presented by a fire engineer.

- 2.20. Third party review is a key area for consideration and could be a potential solution to some of the competence issues within the process. However, caution needs to be applied if a scheme were to be introduced where there is no clear criteria around who is considered competent to undertake this work. Other countries use registration schemes for example and reference could be made to these for elements of best practice e.g. International Fire Engineering Guidelines, 2005.

*Competition and financial impact*

- 2.21. With the introduction in 2005 of Approved Inspectors came a wider choice for applicants as to whom they could engage to review and approve their proposals. While this has its advantages, there are also issues. The competition in terms of driving down price to win business can have an impact on the amount of time spent reviewing proposals and undertaking site visits in a way which means it is driven to a minimum involvement and perhaps, in certain cases, below what would be expected. LFB fire engineering group have been advised on more than one occasion by fire engineers and BCBs themselves that LFB are used as a free third party verification. There have been times LFB have been advised that clients have 'shopped around' for a BCB prepared to agree a design 'if you won't approve it we'll find someone who will'.

*Regulatory Reform (Fire Safety) Order (the FSO)*

- 2.22. The impetus behind the FSO was that those in control of the day-to-day running of a building should also be responsible for its fire safety, which is a day-to-day activity. However, identifying the person in control can be complex when having to examine contracts and leases.
- 2.23. In the independent review carried out by BRE on behalf of LFB it was found that 60% of responsible persons were unclear of their fire safety responsibilities. This could be down to not enough investment on advertising the legislation and that the existing Guidance can be difficult for a responsible person without technical experience to understand.
- 2.24. In addition, the role of the fire risk assessor is completely unregulated. As the role of a fire risk assessor underpins the demonstration of compliance this is unacceptable in high risk premises or where there is greater life risk.
- 2.25. FSO Article 5(3) is to ensure that when a responsible person does not have the requisite skills to undertake a task to ensure compliance with the FSO they must engage appropriate persons to undertake those tasks. An example of this is a fire alarm maintenance contractor therefore has a responsibility to maintain the system correctly and the enforcing Authority can in theory require them to rectify any deficiencies in the works rather than placing that obligation directly on the responsible person. That is not fully understood by all contractors in our experience.

**Q3** Does the current system place a clear over-arching responsibility on named parties for maintaining/ensuring fire safety requirements are met in a high-rise multi occupancy building? Where could this be made clearer? What would be the benefits of doing so?

**LFB response**

*Regulatory Reform (Fire Safety )Order (The FSO)*

- 3.1. Although the current system appears clear to those who are well informed, LFB see many cases where it is not clear to all those who have the duty to comply. In high rise multi occupancy buildings there is no clear way of identifying all the people who have responsibilities around compliance. This includes co-operation and co-ordination , maintenance, reporting, having plans in place for vulnerable people and more.
- 3.2. LFB would like to see a legal requirement to produce a document detailing who has the responsibilities for life safety in all high risk premises. This is not necessarily only related to purpose built blocks of flats, but other building types too. There are clear benefits in this approach whereby responsible persons would be clear on who is responsible, and for what, and enforcing Authorities will easily identify those responsible if things go wrong.

## Competencies of key players

**Q4** What evidence is there that those with responsibility for:

- Demonstrating compliance (with Building Regulations, housing and fire safety requirements) at various stages in the life cycle of a building;
- Assessing compliance with those requirements

Are appropriately trained and accredited and are adequately resourced to perform their role effectively (including whether there are enough qualified professionals in each key area)? If gaps exist how can they be addressed and what would be the benefits of doing so?

### **LFB response**

4.1. In terms of compliance with the Building Regulations during the design and build phase there is wide variation in terms of competence. In 1990 a report was published by Bickerdike Allen<sup>3</sup> which criticised the process of consultation and the competence of both BCBs and fire officers.

#### *Fire safety (prevention and enforcement) officers*

- 4.2. Those that enforce the FSO should be able to demonstrate they have the required competencies to enforce the law - this would improve consistency of enforcement. They should also have sufficient fire safety design knowledge to fulfil the role of reviewing the fire safety consultation submitted as part of the Building Regulations process.
- 4.3. The Bickerdike Allen report set out that fire engineering was a developing industry and that the competence of those reviewing the designs needed to significantly improve. Following that report LFB created the major projects group and committed to ensuring that their specialist officers undertook a fire engineering degree to acknowledge the expected competence. Since then the National Fire Chiefs Council (NFCC) (previously CFOA) have set their own expectations for a fire engineer competence standard which was developed by their Fire Engineering and Technical Standards group in 2013. This was developed to bring in formal qualifications and, dependent on the level of fire engineer, UK Engineering Council registration.
- 4.4. In terms of the fire safety officer role, the NFCC developed a competence framework in 2013 entitled 'Competency framework business fire safety regulators' which specified recommended levels of qualification. LFB made the decision that all fire safety officers would be qualified to a minimum of Level 4 Diploma. This is only part of demonstrating competence, LFB consider that this should quality assured by a independent third party.
- 4.5. While the fire service has introduced a competency framework detailing expectations on their own officers, the changes in the competence standard in the rest of the industry are sometimes difficult to identify.

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<sup>3</sup> Fire and Building Regulation: A Review by Bickerdike Allen Partners for the Enterprise and Deregulation Unit in Conjunction with the Home Office and the Department of the Environment– 31 Dec 1990



#### *Building Regulations and BCBs*

- 4.6. While the fire service has introduced a competency framework detailing expectations on their own officers, the changes in the competence standard in the rest of the industry are sometimes difficult to identify.
- 4.7. A 2017 report produced by Meacham Associates and commissioned by the Building Standards division<sup>4</sup> considered the current situation in Scotland. Many of the issues raised are relevant also to the process within England in terms of the concerns over competence levels of those undertaking and reviewing fire safety designs.
- 4.8. As detailed above in relation to building performance standards, LFB have real concerns about the level of expertise of BCBs on, particularly, the more complex fire safety designs. The level of fire safety knowledge is hugely variable between BCBs, dependent on their experience and qualifications.

#### *Building fire safety design*

- 4.9. At present there is no restriction on who can develop a fire safety design. Submissions can be developed by architects with no or very little fire safety training and there is no stipulation on when different levels of competence are needed. If we were to consider the more complex design strategies it would be a reasonable expectation that these should be undertaken by someone who is both qualified and, perhaps, professionally registered as a fire engineer. However, there is presently no protected title for a fire engineer and there is no requirement for checking of experience and/or qualifications of individuals carrying out even complex fire engineering design.
- 4.10. In the last five years LFB have seen a significant increase in complex design strategies being submitted by parties that we do not believe have the appropriate level of competence. LFB want to see this addressed by tighter controls and more robust checking of competence as part of the compliance process. BS7974: Application of fire safety engineering principles to the design of buildings could assist with this (it is currently under review and will be shortly issued for public consultation).
- 4.11. LFB would like to see similar standards to that of structural engineers applied to the fire engineering industry i.e. the expectation that the structural design is completed by a Chartered Engineer qualified in structural engineering. Also where third party reviews are undertaken the competence of these individuals is at the correct level.

#### *Competence of contractors (build and maintenance)*

- 4.12. There is widespread concern over the competency of contractors which is at least partially responsible for identified failings in compartmentation in public and private buildings throughout the country. This can be a contracting company issue where cost or time savings are realised by either;
  - not installing the correct products
  - not installing products correctly
  - the product is not fitted in the right arrangement as detailed in the manufacturers specification
  - By misinformed by product marketing literature
  - not investing in appropriate training of staff.

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<sup>4</sup> Competency Criteria for Local Authority Verifiers when checking Fire Engineered Solutions for compliance with Building Standards 10 May 2017

- a contractor issue where there is a lack of understanding of what is being installed and how small changes in fixings or products can detrimentally affect the performance of the overall system.

Please note that the above list is not exhaustive.

- 4.13. Another major concern of the LFB is the lack of quality assurance systems in place on site for ensuring compliance with the Building Regulations, particularly in Building Regulations relation to critical life safety elements.

*Fire safety systems designers, installers and maintainers.*

- 4.14. In many of the areas of life safety fire systems (e.g. complex smoke ventilation systems) there is no requirement for formal qualification.
- 4.15. An example of the potential consequences would be when a contractor is charged with maintaining a complex system with little appreciation of the design parameters and limitations of the system and little understanding of the cause and effect analysis originally applied. Following installation this can result in maintenance contractors not maintaining key components, or detrimentally changing or reconfiguring the system without understanding the repercussions. An example of this is mechanical ventilation systems within purpose built blocks of flats.
- 4.16. Introducing minimum qualifications for all aspects of the industry would be time consuming but should be a long term aspiration. An starting point would be an expectation that fire safety systems contractors are members of an appropriately governed trade/industry body which has satisfactory means of assessing it's members competence.
- 4.17. Additionally, these contractors could be FSO Article 5(3) Responsible Persons and therefore competence is a critical issue to demonstrate compliance. More guidance on what this should look like would be another good starting point.

*Statutory undertakers*

- 4.18. The issues associated with appropriately trained and accredited professionals for transport infrastructure is no different than for the rest of the built environment. If benchmark standards are to be outlined for professionals responsible for Building Regulations compliance, this should also extend to those providing fire safety guidance for Statutory Undertakers. It could be argued that the level of competence of professionals, especially fire engineers, working on behalf of Statutory Undertakers is even more critical given that there is no requirement to consult a BCB.
- 4.19. A requirement for an independent third party review of transport infrastructure proposals (such as a BCB) as required for the majority of the built environment would also be appropriate due to the scale and complexity of these projects. This comment also applies to the general built environment.

*Regulatory Reform (Fire Safety) Order – risk assessors*

- 4.20. As previously stated there is no legal requirement to be competent to carry out a fire risk assessment. The Fire Risk Assessment Competency Council (part of the Fire Sector Federation) set up a requirement following the fire at Lakanal House which details the competencies required for a fire risk assessors.
- 4.21. The current regime is not effective in terms the role of the fire risk assessor as this is a completely unregulated life safety function. As this underpins the demonstration of compliance this is unacceptable in high risk premises.

- 4.22. There is a need to consider a register for competent persons to assist those responsible for the fire risk assessment and the prevention and protection measures for certain high risk premises. e.g. anyone without any qualification can be a fire alarm engineer, fit fire doors and other fire safety equipment.
- 4.23. There is no distinction at present between a fire risk assessor who works on different types of buildings or buildings which are considered to be of a higher life safety risk. Schemes should consider if progressive competencies should be linked to building complexity and/or more vulnerable occupants.

*Regulatory Reform (Fire Safety) Order – Article 5(3) persons*

- 4.24. There are currently no formal qualifications required for the installation or maintenance of life safety systems such as fire alarms emergency lighting, smoke control systems and suppression systems.

## **Enforcement & sanctions**

**Q5** Is the current checking and inspection regime adequately backed up through enforcement and sanctions? In particular

- Where does the regime already adequately drive compliance or ensure remedial action is always taken in a timely manner where needed?
- Where does the system fail to do so? Are changes required to address this and what would be the benefits of doing so?

### **LFB response**

LFB are concerned about how effective the enforcement building regulations is when there a restrictive time limitation (up to two years after completion of the offending work) in place. Due to this limitation there is often a reliance on LFB to prosecute offences using the FSO. There is a need to consider the time limitation particularly in terms of the scale of the offence committed. For more serious cases there should be an extended period of time to prosecute as long as it could be demonstrated to be part of the particular build phase under investigation i.e. was not an earlier or later modification to the build work.

#### *Independence as part of the Building Regulations process*

- 5.1. Some issues about independence in the Building Regulations process have been highlighted above. A further important aspect is the appropriateness of a BCB approving work within their own enforcement jurisdiction and offering fire safety advice whilst receiving payment or having a vested interest in the outcome. The need to maintain independence in the role of the approving authority is clearly critical to the integrity of the process.

#### *Primary authority partnerships (PAPs)*

- 5.2. The Regulatory Enforcement and Sanctions Act 2008 (RES Act) came into effect on 1 October 2008 and amongst other things it made provision for more consistent and coordinated regulatory enforcement by local authorities and fire and rescue authorities who are the enforcing bodies for one or more of the pieces of legislation listed in RESA, by establishing the Primary Authority scheme. It is administered by the Better Regulation Delivery Office (BRDO).
- 5.3. The scheme was introduced to address businesses concerns regarding how authorities apply legislation relating to trading standards, environmental health and licensing. It was to deal with concerns about contradictory advice, wasted resources, duplicated effort and lack of effective dispute resolution when authorities disagree.
- 5.4. A Primary Authority Partnership (PAP) is available to a single business that is regulated by multiple local authorities, or to a business that is part of a group of businesses that are collectively regulated by multiple local authorities, where these businesses share an approach to compliance. A shared approach to compliance might be demonstrated through membership of a trade association that provides regulatory guidance or through a franchisee relationship with a business that specifies compliance controls.
- 5.5. The Primary Authority scheme allows an eligible business to form a statutory partnership with one fire authority and that authority becomes the Primary Authority. This Primary Authority provides assured advice, ensures consistency of regulation across the country,

co-ordinates relevant regulatory enforcement activity in relation to that business and reduces the duplication of paperwork and inspections.

- 5.6. LFB would welcome greater clarification on the separation between the enforcement role of fire and rescue services in PAPs and their partnership working agreements to prevent conflicts of interest. Conflicts can arise, for example, where there is a request for product/company endorsement or where the fire and rescue service are acting in the role of a consultant outside of the intended framework.

#### *Fire service trading subsidiaries*

- 5.7. Some fire and rescue services have trading companies. These subsidiaries can offer a range of services including training, fire risk assessment through to fire engineering design consultancy. There has been concern raised by parts of the fire sector around the potential for conflict of interest e.g. where a fire service trading arm offers fire engineering design services within this own enforcement area.

#### *Industry enforcing their own standards*

- 5.8. The development of the performance standards and the licencing/ongoing auditing of Approved Inspectors are all undertaken by those within the industry. LFB would welcome a review of whether this is an effective process or not.
- 5.9. Currently we understand that there are no mandatory checks for any fire safety elements during building construction. It is difficult to ascertain items such as cavity barriers are present or fitted correctly once the construction is complete. LFB would welcome serious consideration of a more robust process of inspection practice. The impact on fire safety measures of follow on works also needs careful attention, particularly how to stop instances where e.g. compartmentation is completed and then breached by later utility installation.
- 5.10. For more complex schemes perhaps the fire professionals who developed the original fire strategy would need to be involved at all stages of the building's development (concept design to sign off stage) to ensure that the occupied building fulfils the original design objectives. This approach is adopted in other countries e.g. Australia, and creates a level of responsibility on this individual.
- 5.11. The FSO order relies heavily on the building being built appropriately – this allows the responsible person to engage a risk assessment with some assumptions in terms of things like suitability of the construction. However when the construction is inadequate there are limited opportunities for a risk assessor to identify hidden issues. There are several ways to address this, with the most obvious being ensuring that buildings are built correctly. A requirement for more intrusive risk assessments might be a more immediate solution.

#### *Regulatory Reform (Fire Safety) Order*

- 5.12. Although the FSO is a self regulating piece of legislation, this needs to be backed up with robust enforcement and those who do not comply need to know there will be consequences.
- 5.13. LFB operates a risk based FSO inspection programme. Estimates show there are some 850,000 properties that the FSO applies to in London. LFB have carry out around 14,000 inspections each year which results in around 350 Enforcement notices and 10 prosecutions annually.
- 5.14. The courts have unlimited powers to deal with those who are prosecuted however there have been issues with taking a prosecution against those undertaking building work or against BCBs due to a lack of historic case law.

- 5.15. Fire and rescue authorities have three formal notices they can issue to ensure compliance. These are:
- **Alterations notice (Article 29 Regulatory Reform (Fire Safety) Order 2005)**  
An alterations notice requires the responsible person to notify the LFB of any proposed changes which may increase the risk in the premises. They are issued where the LFB considers that the premises constitute a serious risk or may constitute a risk if changes are made. An alterations notice does not mean that the responsible person has failed to comply with the Regulatory Reform (Fire Safety) Order 2005.
  - **Enforcement notice (Article 30 Regulatory Reform (Fire Safety) Order 2005)**  
An enforcement notice is issued where the responsible person has failed to comply with the Regulatory Reform (Fire Safety) Order 2005 and details corrective measures that they are legally obliged to complete within a set timescale, to comply with the law.
  - **Prohibition notice (Article 31 Regulatory Reform (Fire Safety) Order 2005)**  
A prohibition notice is issued where the use of the premises may constitute an imminent risk of death or serious injury to the persons using them. This may be a restriction of use, for example imposing a maximum number of persons allowed in the premises, or a prohibition of a specific use of all or part of the premises, for example prohibiting the use of specific floors or rooms for sleeping accommodation. The issue of a Prohibition Notice under the Regulatory Reform (Fire Safety) Order 2005 is the most serious enforcement option available to the LFB other than prosecution.
- 5.16. Before the introduction of the FSO, the Chief Fire Officers Association (CFOA, now NFCC) issued guidance to fire services on the introduction of informal notices and/or action plans. However, fire services have introduced this in different ways. These "notices" have no legal standing and therefore are only used for minor non compliance. In London these are called notification of deficiencies and around 700 are issued on average each year. LFB would welcome a more statutory footing for this level of notice and for them to be specified on the risk to particular individuals using buildings.

#### *Housing Act*

- 5.17. As detailed in the response to Question 1, there is a need to ensure the overlap and distinction between Housing Act and FSO is much clearer. This would be significantly assisted by a clear definition of what is meant by "used in common".
- 5.18. More collaboration between regulators including FRSs, housing enforcement bodies (LA), BCBs, and the Health and Safety Executive (HSE) would be welcomed by the LFB, as would more formal arrangements to ensure adequate enforcement takes place.
- 5.19. LFB would welcome consideration of whether if certain premises should have a single enforcement regime for fire. It should also be considered whether it is appropriate that enforcing bodies can't enforce on their own premises e.g. LA on their own stock and LFB on LFB properties. Consideration should be given that these admissions need to have a third party review.

#### *Public register*

- 5.20. Consideration should be given to a public register of enforcement undertaken by agencies, including building control. This will reflect schemes like LFB and LA food hygiene ratings which will provide a more transparent system for the public.

## **Tenants and residents voice in the current system**

**Q6** Is there an effective means for tenants and other residents to raise concerns about the fire safety of their buildings and to receive feedback? Where might changes be required to ensure tenants'/residents' voice on fire safety can be heard in the future?

### **LFB response**

- 6.1. LFB investigate any referral of concerns in fire safety issues. Where there is serious concern this is normally done within three hours. Other referrals are dealt with on a risk based approach.
- 6.2. LFB publish contacts details for fire safety on our website.<sup>5</sup> Fire safety can be contacted for advice and guidance, and this is available for all members of the public. For queries without a 'risk to life' LFB officers will deal with fire safety queries via telephone or email, or book an inspecting officer visit at a convenient time. Where there is a 'risk to life' (e.g. locked fire exits which occupants of the building should rely on) LFB will have someone attend site within a defined time period of being notified. This service is available at any time during the day or night.
- 6.3. Whilst with the majority of the queries LFB deal with are genuine concerns, some of those are not appropriate for the LFB to deal with – for example a neighbour dispute involving a well controlled BBQ but one which allows smoke onto a neighbours washing line. In those cases the LFB will attempt to direct the query to the appropriate person/body.
- 6.4. For those queries which are reported to the LFB this an effective means of response. LFB is aware that there might be instances of fire safety issues which are spotted and not referred.
- 6.5. Various central methods for dealing with members of the public to deal with issues are in use such as:
  - Reporting fly tipping: <https://www.gov.uk/report-flytipping>
  - Example of Local Authority reporting for various issues: <https://www.westminster.gov.uk/report-it>
  - Reporting hate crimes: <http://www.report-it.org.uk/home>
- 6.6. A similar system, if well publicised, might be useful to allow members of the public to report fire safety issues, although that should not necessarily be restricted to tenants/residents but more widely available for members of the public to report fire safety issues. Any such system would have to interact with both fire authority and local authority IT systems to be effective.
- 6.7. In most cases, for existing blocks the first contact should be with the managing agent of the property who should rectify issues causing concern.

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<sup>5</sup> <http://www.london-fire.gov.uk/FireSafetyRegulationTeams.asp>

## **Quality assurance and testing of materials**

**Q7** Does the way building components are safety checked, certified and marketed in relation to Building Regulations requirements need to change? In particular:

- Where is the system sufficiently robust and reliable in maximising fire safety and, if appropriate
- Where specifically do you think there are weaknesses/gaps? What changes would be necessary to address these and what would be the benefits of doing so?

### **LFB Response**

- 7.1. 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.
- 7.2. Through a misunderstanding of ADB some manufacturers have made incorrect claims of compliance with the guidance. An example is some ACM manufacturers have claimed their products comply with the requirements of B4 when they have achieved Class 0 surface spread of flame requirements but have not achieved the limited combustibility requirements. Product specifications should be clear and disclose performance in terms of all relevant aspects of Building Regulations. Another example where this is not the case would be thermal insulation products only giving U-values but not fire performance data
- 7.3. Some products are being used having passed standard fire tests however there is a question as to whether these fire test itself needs further development for these particular products (i.e. furnace tests for structural steel/concrete members being used for Cross Laminated Timber members).
- 7.4. 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 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.
- 7.5. Some fire protection products (e.g. fire doors) are covered by a British Standard which requires labelling and certifying as having passed the appropriate fire test. However many other products don't which is a significant inconsistency within the industry. It should also be noted however that a label or certificate does not, in isolation, demonstrate that the product complies in full with the regulations.
- 7.6. The Loss Prevention Certification Board (LPCB) operated by BRE is a privately operated testing regime and publishes it's results online in Redbook live (<http://www.redbooklive.com/index.jsp>) However there is no national requirement to have products or services assessed by this route. A national (or international) register of tested and approved fire safety products would be of assistance.
- 7.7. Through a misunderstanding of the Building Regulations guidance (AD-B) some manufacturers have made incorrect claims of compliance with the guidance. An example



is some ACM manufacturers have claimed their products comply with the requirements of B4 when they have achieved Class 0 surface spread of flame requirements but have not achieved the limited combustibility requirements. Product specifications should be clear and disclose performance in terms of all relevant aspects of Building Regulations. An example where this is not the case would be thermal insulation products only giving U-values but not fire performance data

- 7.8. Fake fire resisting glazing, fire doors and cladding materials are known to have been produced. To determine if a product is legitimate or not would usually require removing a product and subjecting it to expensive fire testing. It is unclear if Trading Standards in most areas have the capacity and/or appetite to consider concerns such as those above.

#### *White goods*

- 7.9. It is important to consider the fuel loading in homes and the affect this can have on the structure and its fire safety measures. Many white goods are now made of plastic and insulated with polyurethane foam. Domestic refrigeration has been of particular concern to LFB, as it is normally on 24/7 and many appliances have combustible plastic backs which in turn covers combustible polyurethane foam. There have been several deaths in London alone in recent years due to refrigeration fires and the fire at Grenfell Tower also started in a fridge freezer.
- 7.10. Research carried out by LFB with our scientific advisers, has shown that flame spread on a plastic back panel could be as fast as one centimetre per second and in reality, as the fire develops to involve the polyurethane foam, this rate of flame spread will increase (as seen at further tests carried out at BRE).
- 7.11. On the basis of the research, it has been calculated that if just the back insulation panel of a typical refrigeration appliance was consumed by fire, it could produce heat at a rate of some 320 kW. This is the same rate of heat produced by 320 one bar electric fires all switched on together (please note: this figure is based on the back panel only. In reality the fire will develop to involve the insulation which covers every side of the food compartments).
- 7.12. One part of LFB Total Recalls<sup>6</sup> campaign, supported by NFCC, is calling for improved manufacturing standards for white goods to make them safer.

#### *Home energy generation*

- 7.13. A further area for consideration, is around home energy generation and storage. Roof structures which may be fitted with solar arrays, should incorporate an adequate level of protection from fire. A large fire in Erith in 2016 started in the solar panel array on the roof of a six storey block and resulted in fire spread through the building, with all residents needing to be rehoused.
- 7.14. The expected major increase in home energy storage solutions, which could involve technologies such as banks of lithium-ion batteries (which can fail violently), should also be considered as a potential future risk.

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<sup>6</sup> [Fires in White Goods and Product Recalls Action Strategy - FEP 2572](#)

## Differentiation within the current Regulatory system

**Q8** What would be the advantages/disadvantages of creating a greater degree of differentiation in the regulatory system between high rise multi occupancy residential buildings and other less complex types of residential/non residential buildings?

What specifically do you think further differentiation might assist in ensuring adequate fire safety and what would be the benefits of such changes?

### **LFB Response**

Throughout these questions there is reference to high-rise multi occupancy buildings. LFB has assumed that for the purposes of this document this description is referring to a tall purpose built block of flats. The term multi occupancy can have different meanings dependent on the reader. Those within the fire industry might assume that this is making reference to a building that contains different purpose groups e.g. commercial and residential elements or indeed flats of multiple occupation.

#### *Building regulations*

- 8.1. LFB do not see a benefit or need in providing a differentiation between high rise residential buildings and other types of residential or non residential buildings in building regulations. The functional nature of the Building Regulations 2010 provides a suitable framework upon which the designs should be developed for any type of building and if done correctly should afford the right level of safety.
- 8.2. Purpose built blocks of flats can be a relatively straightforward design and a lower rise, multi purpose group building could pose more complex considerations in terms of the fire safety design. The complexity of a project is not determined by a single parameter such as height or occupancy purpose group.
- 8.3. Within LFB internal guidance consultations are classified into three broad categories SIMPLE, STANDARD, or COMPLEX.
  - **SIMPLE**  
This includes minor alterations not affecting means of escape and Building Regulations applications for small premises.
  - **STANDARD**  
This will be the normal, mainstream consultation work where prescriptive solutions have been applied (e.g. compliance with the Approved Document or provision of acceptable Means of Escape as prescribed in the relevant British Standard Code of Practice).
  - **COMPLEX**  
This category includes all other consultation work which falls outside the 'simple' and 'standard' categories (i.e. where it is not proposed to adopt conventional prescriptive standards or where relaxations are being sought on account of the incorporation of active fire protection or suppression measures). The term 'complex' should also be taken to include innovative building designs and other circumstances in which it is proposed to adopt fire safety engineered packages to satisfy the requirements of Part B of the Building Regulations.
- 8.4. Although we do not feel that the Building Regulations require a differentiation, LFB would welcome more guidance on 'super high rise' buildings (including residential) as Approved Document B Volume 2 currently does not include a distinction between a building 51m in height and 200m in height. While ADB makes reference in its

introduction to being applicable to 'more common building situations' LFB regularly see the guidance being used beyond the limitations of certain aspects of the guidance. LFB would recommend that the scope of ADB is considered and limitations on its use being clearer.

*Regulatory Reform (Fire Safety) Order (the FSO)*

- 8.5. LFB would like to see a greater level of differentiation in the guidance on how the FSO is applied in high rise multi occupancy residential buildings. There are other types of premises that require a greater level of scrutiny too. These include premises which house some of the most vulnerable people in society e.g. hospitals, residential care homes, specialised housing, hostels and HMOs. The advantage of having a different regime for these building types is that there would be a stronger emphasis on protecting the most vulnerable by ensuring those who are responsible for any life safety elements of these premises are suitably qualified and registered.
- 8.6. There is a requirement for everyone engaged in preventive and protection life safety measures in high risk premises to demonstrate competence through qualification and or registration. It would be useful to also consider an annual sign off of these buildings by an independent third party to demonstrate compliance, although consideration would have to be given to who would undertake this role, LFB would not advocate a return to fire certificates.

## International comparisons and other sectors

**Q9** What examples exist from outside England of good practice in regulatory systems that aim to ensure fire safety in similar buildings? What aspects should be specifically considered and why?

### **LFB Response**

#### *Regulatory Reform (Fire Safety) Order and Housing Act*

- 9.1. The reduction in fire deaths and fire injuries in the UK over the past 30 years show that UK fire safety has had successes but tragic events show we cannot be complacent. The FSO is predominately drafted to meet two European directives; 89/654 workplace regulations and 89/391 framework directive. Therefore, legislation and standards throughout Europe should be similar but there are distinct variations. For example; the FSO is to primarily to protect employees from fire, and the interpretation applied when drafting the FSO was that an employee (e.g. a cleaner) could be within the common parts of a block of flats, therefore the legislation needed to consider those areas. However both Scotland and Northern Ireland do not have the common areas of blocks of flats included in their regulations although it is unclear if that stance is actually in accordance with the expectations set out in the European directives.
- 9.2. The current regime has the flexibility to be a successful system however it needs to ensure the most high risk premises have the robust scrutiny to ensure the chance of tragedies are greatly reduced, and it needs to be clear regarding the overlaps of the two pieces of legislation (RR(FSO)O and HA).

#### *Other countries*

- 9.3. Whilst LFB do not hold extensive knowledge of regimes or guidance in other countries, we have some observations which might assist:
- 9.4. Northern Ireland through their Care Quality Commission only allow those who are on a fire risk assessors registration scheme to carry out a fire risk assessment in a care home. Such an approach goes a long way towards appropriate competence and may be worth considering for higher risk occupancies.
- 9.5. Standards in the United States of America use prescriptive codes which have been adopted in several countries, though they can be inflexible.
- 9.6. LFB understand that in the Middle East the use of a third party reviewer is more common.
- 9.7. Some countries (e.g. Australia and New Zealand) require the design of a building to be agreed (and approved) with regulatory bodies at an early design stage. This type of approach could alleviate LFB concerns relating to the timing of the consultation/approvals process.
- 9.8. Some countries, such as New Zealand, require the evacuation strategy to be formally agreed with the fire service as a regulatory requirement. A change such as this removes the self regulation for fire safety (which is similar to other H&S requirements) and places additional workload on fire and rescue services. However it does place a greater emphasis on persons to have an appropriate strategy in place, and one which is externally verified.
- 9.9. Some countries also have defined points in a build which have a formal site inspection requirement, such as foundations complete, or roof on. Under these regimes it is common that works cannot progress without the formal site inspection. For example, LFB understand that in Australia the fire engineer who developed the strategy has

responsibility for signing off the building at the end of the construction phase to ensure that the original design intent has been met.

- 9.10. In Europe, there are three basic types of plan approval and site inspection regimes:
- Public authorities are responsible for plans approval and site inspections (e.g. Ireland and the Netherlands).
  - Public and private authorities share responsibilities: usually one for plans and one for site inspections;
  - The applicant can chose to have plans approval and site inspections conducted by either a public or private authority (e.g. as is the case in England now).
- 9.11. Whilst there are benefits and drawbacks to each of the three regimes, there might be changes to the current financially competitive process between those who can deliver these services. As described above, that financially competitive process can lead to a reduction in services (e.g. frequency of site visits) to cut costs and therefore gain business.
- 9.12. In Scotland all new residential care homes, sheltered housing and high rise domestic accommodation above 18 metres are fitted with sprinklers. In addition, sprinklers are required in all covered shopping centres. New schools in Scotland are also fitted with a sprinkler system.
- 9.13. In Wales The Domestic Fire Safety (Wales) Regulations 2013 was introduced into the Building Regulations and require sprinklers to be fitted in all new or converted:
- Care homes
  - Children's Homes
  - Hospices
  - Student accommodation
  - Boarding Houses
  - Hostels (other than those used for short stay leisure accommodation)
- The second stage, implemented on the 1st January 2016, mandated the provision of (AWSS) in all new houses and flats, including:
- Registered group homes
  - Adult placements
  - sheltered housing

**Q10** What examples of good practice from regulatory regimes in other industries/sectors that are dependent on high quality safety environments are there that we could learn from? What key lessons are there for enhancing fire safety?

**LFB Response**

- 10.1. The Health & Safety At Work Act has been the pillar of health and safety legislation for over 40 years, however in that time subordinate legislation has been introduced to make risk critical stages clearer e.g. working at height or confined spaces.
- 10.2. In the same way, Article 24 of the FSO gives the Secretary of State powers to introduce such Regulations. This has already been used for the introduction of sub surface regulations which are around a special class of premises. Subordinate legislation could therefore be introduced but only within the confines of the original Order. That subordinate legislation could not change the extent the Order could be applied – e.g. it cannot change this FSO to include the inside of a flat. However, clarification might be provided in respect of matters such as the application for compartmentation between flats and the external façade of a residential building.
- 10.3. National agencies such as Food Standards Agency and HSE sit above local authority enforcer. LFB would welcome consideration of whether something similar is appropriate for fire safety enforcement.

## **Appendix 1: Approved Document B (Volume 2) Buildings other than dwellinghouses**

Below are areas within the above guidance that LFB are of the opinion should be reviewed.

### **General comments**

1. The guidance would benefit from clearer definition about what 'more common building situations' are as this has significantly changed in the past ten years. LFB have heard tall single stair towers approaching 250m tall described as common building type and arguments that their height is irrelevant – and disagreed on both points.
2. Modern methods of construction such as the extensive use of cross laminated timber (CLT) should be considered and their suitability in high rise developments reviewed in conjunction with latest research.
3. It would be helpful to place a height limit on either the applicability of the guide, or limitations for the applicability of certain aspects. For example – an extremely tall residential tower could use openable windows for venting without any consideration for the wind effects - the wind effects for a 150m tall tower will be quite different from those of 30m.
4. Cross referencing requires updating including to current standards (e.g. BS 9999 rather than BS 5588), and where new systems are available (e.g. residential/domestic sprinkler and watermist systems).
5. Would benefit from stating that the documents are intended for use only by fire safety professionals, or those competent in its application.
6. Would benefit from guidance around competency of individuals and companies undertaking design and construction works.
7. Would benefit from stating that the document should be read holistically so that a specific solution does not compromise guidance from another section. An example of something that should not happen is a solution is proposed to satisfy B1 that compromises firefighting access (e.g. by reducing corridor protection in a block of flats).

### **General Introduction**

8. 0.12 – Reg 16B should be updated to Reg 38. Appendix G references Reg 38.
9. This should state that the newer version of a standard 'should' rather than 'may' be used as guidance.

### **B1 – Means of warning and escape**

10. V2 para 2.9 on emergency egress windows requires control of the area below the window to ensure the space is appropriate to escape down to. This has been proposed in flats dropping to a commercial area below (e.g. restaurant), or to a balcony below, but at height in a block of flats (e.g. over 50m). Further clarification would be

appropriate. The use of escape windows as a concept may conflict with the ethos of lifetime homes and this should be considered.

11. The correlation between height of top floor and the expectations of Paragraph 2.10-2.12 are unclear.
12. Where restrictions such as 11m small single stair building height are discussed, further explanation as to why the restriction is proposed would assist (i.e. limitations on firefighting access).
13. Similar to explaining the 11m height would be stating that the small single stair residential requires access to at least one window in an accommodation room to allow rescue. Designs have been proposed whereby one flat is at the front and one at the rear which is not accessible for attending fire crews. If the stair is compromised due to the lack of protection, then occupiers may not be able to cross the stair and access the neighbours flat to be rescued – thus the small single stair building may not be appropriate in that application.
14. Purpose built blocks of flats – balcony escape is not covered and should be included.
15. Current popular designs such as open plan flats, large open plan flats and multi level open plan flats are not covered and this would be beneficial.
16. Flats internal travel distance (e.g, para 2.13 and diagrams 2 and 3). It is unclear why there is a limitation of 9m in either the protected hall or total distance without protected hall, yet with a protected entrance hall there is no limitation to the travel distance within a room. This is commonly interpreted that ADB does not protect the occupants of the room in which the fire develops. Further clarification would be beneficial.
17. There should be a limitation on height of the building whereby the external wall vent (para 2.26(a)) is appropriate.
18. Table 4 – minimum exit widths should be updated to comply with DDA requirements.

### **B3 Internal fire spread (structure)**

19. An ultimate height restriction on timber framed buildings should be considered.

### **B4 External fire spread**

20. External fire spread up the façade is commonly misunderstood, and is often considered as just spread to adjacent buildings. Further guidance is required discussing façade materials (e.g. insulation combustibility).
21. Consideration should be given to whether it remains appropriate to accept combustible façades on buildings below 18m in height given recent BRE test results for cat 3 cladding materials.
22. Similarly, recent incidents show that consideration must be given to materials and structural design to mitigate the risk of a balcony fire spreading to other parts of the building. There is currently no specific fire design guidance for balconies, except when



they act as a means of escape. This effectively means that there are no requirements accounting for external fire spread from the incorporation of balconies in a structure, leaving their resolution open to interpretation. BRE has produced a report recently addressing this matter.

## **B5 Access and facilities for the fire and rescue service**

23. An update on fire service access would be beneficial, particularly regarding modern design trends such as podium access (usually flats above commercial such as shopping centre or supermarket) which provide complications for firefighting (e.g. wayfinding, line of sight, communications, excessive hose distances, lack of protection).
24. There is currently a disconnect with external firefighting capabilities and firefighting facilities expected by the guidance. The 18m requirements supported equipment which is no longer in operational use. A review of firefighting access should be undertaken to consider if 18m is still the appropriate minimum height for a firefighting shaft (other than purpose groups 4,5 and 6 where 7.5m is used).
25. Firefighting water provisions are often misunderstood – paragraphs 16.1-16.3 and 17.8-17.10 would benefit from further explanation and clarity.

## **Tables**

26. A2 – it is unclear why a 'residential other' purpose group building (e.g. student accommodation, hotel) should not require suppression over 30m.
27. Further to the above, the guide would benefit from additional commentary regarding the expectation of suppression in buildings over 30m. Sometimes the importance of suppression in tall buildings is lost on users with this information solely in the table.
28. B1 - The minimum fire resistance for a door (as in AOV door) opening to a smoke shaft is often misinterpreted. Often users chose a 'service shaft 2(d)' (half the wall in which it is fitted) rather than the correct 'not described 2(e)' above (as for the wall in which it is fitted). Logic tells us that in terms of retaining compartmentation, half the wall in which it is fitted works for a service shaft – for example in a residential building with 60min FR walls, a fire would need to breach a 30min door into the shaft and a 30min door out of the shaft of the floor above to compromise the compartmentation. However, for a smoke shaft, its very nature means the hot products of combustion will be carried within the shaft itself. Therefore for a fire on a floor, with the smoke shaft AOV door open on that floor, there will only be single door protection to the floors above – therefore they should be the same as the wall it is contained in (60min in this example). The table could do with a specific entry for smoke shafts stating that they should be as per the wall they are in.

## **Appendix C**

29. Diagram C6 – this would benefit from showing that the top floor measurement should include the top floor of a flat of more than one floor, or the top floor of a flat with accommodation above the access level.

## **Appendix G**

30. Would benefit from discussing where the handing of fire safety information is appropriate for refurbishments as well as erection, extension or change of use.

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