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**Consultation proposal on options to recommend sprinklers in care homes, remove national classifications from Approved Document B, and recommend a maximum height threshold for the use of one staircase in blocks of flats.**

The National Fire Chiefs Council (NFCC) is pleased to respond to the consultation published on 23<sup>rd</sup> December 2022 *on options to recommend sprinklers in care homes, remove national classifications from Approved Document B, and recommend a maximum height threshold for the use of one staircase in blocks of flats.*

NFCC is the professional voice of the UK fire and rescue services (FRSs) and is comprised of a council of UK Chief Fire Officers. This response was put together by NFCC's Protection Policy and Reform Unit (PPRU).

This response was drafted in consultation with our members across the FRSs, and reflects their expertise and competence on the subject matter.

**General Comment**

NFCC welcome the policy intent and direction of some of the proposals within this consultation, yet have concerns about the lack of clarity, detail and decision-making processes within the consultation.

*ADB suitability*

Our primary concern is that this consultation is another piecemeal and fragmented approach to address expanding problems and growing concerns about the suitability of Approved Document B (ADB) as a guidance document within the modern and current building environment.

Government announced in 2018<sup>1</sup> that they were going to undertake a review of ADB along with the suite of other Approved Documents and that it was likely to take 5 years. NFCC has been involved in many of the working groups looking into aspects of the ADB review and are concerned at the stalled nature, and lack of transparency of these working groups. We do not believe that Government is on track to deliver the review in the timescale promised with many projects already delayed and some not even started, some four years after the announcement.

ADB has not been properly reviewed since 2006, which was almost two decades ago and questions need to be asked on whether the document as it stands is fit for purpose in its current form. It has been amended and adjusted in a piecemeal and disjointed fashion, but a holistic overview and insight has not and is still yet to happen. NFCC would highlight that even the Secretary of State Michael Gove has called building regulations 'faulty and ambiguous'<sup>2</sup>.

Within the two decades since the last review, the over-arching legislation governing fire safety in occupied buildings and the building industry has changed and many buildings are now being built to a fire-engineered solution and a risk-based regime of building management, ADB does not work for a risk-based regime. There are many elements including Modern Methods of Construction, electric and modern vehicles, and the changing demographics of those that access and live within our buildings within the built environment that were not a consideration during the last review. NFCC believe that if someone was to design to meet the London Plan as laid out, you would not be able to plan according to ADB. This level of inapplicability for a major piece of building guidance is staggering and emphasises the rhetoric of whether ADB as it currently exists is fit for purpose and is capable of meeting the functional requirements of the Building Regulations.

NFCC have been staunch and consistent in our call for buildings to be appropriate and fit for the people that live in them and not force people to be right for the building. ADB does not consider the egressibility of a building, how people are able to leave the building particularly at the time of an incident. We find the silence on elements such as evacuation lifts as deafening and dangerous. Those who are not able to easily evacuate must be considered, so that they are able to either more easily evacuate or are able to get to a place of refuge until such time as emergency services, namely the FRS, are able to assist them with their evacuation.

Buildings are increasingly being built with the express requirement for building management actions to be in place in order to meet the functional requirements after they are completed. Yet ADB makes little to no consideration of management of a building. We would encourage DLUHC to ensure that how we design buildings is in sync with how we use those buildings once occupied, those two fundamental elements must be considered together and cannot continue to be considered in isolation.

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<sup>1</sup> <https://www.gov.uk/government/consultations/technical-review-of-approved-document-b-of-the-building-regulations-a-call-for-evidence>

<sup>2</sup> [Gove admits 'faulty' guidance partly to blame for Grenfell fire | Grenfell Tower fire | The Guardian](#)

Provisions within any building regulations and design guidance must account for, recognise and mitigate for management of the building upon occupation. NFCC have been clear that FRS' comments within the development and design process cannot continue to be ignored by those receiving them, and have called for a duty on those receiving them to respond to, any comments made by the FRS and to demonstrate how they have been addressed for this reason. It is easier to rectify issues within a building in the design phase rather than the need to carry out enforcement through the FSO in order to mitigate or remediate issues during occupation. It is always less expensive to get things right at the design and construction phase than to fix them in occupation or have to introduce management solution costs (such as waking watches) which can sometimes be passed to those who live within the building.

NFCC would also highlight to Government that any provisions for the management of buildings in occupation are embedded with the assumption of the lowest common denominator of management, to ensure buildings are robust enough to counteract poor management, rather than assume that buildings will be managed well. Evidence from Grenfell, as well as the Government's experience in getting those responsible to fix and remediate unsafe buildings demonstrate a clear message that buildings must be built safely, and not assumed to be managed safely.

NFCC remain concerned that statutory guidance, such as the Approved Documents, are viewed as being the maximum required standard, and that following this guidance will equate with meeting the functional requirements of the Building Regulations. While the Approved Documents themselves state that this is not the case and restrict their scope to 'common building situations', Approved Document B does not define what falls within the scope of that term. The status of the Approved Documents is not well understood.

### *People and management in Care Homes*

NFCC is concerned that within the considerations of the sprinklers, management and staffing were not key and leading issues within the decision and thought process. We believe that this issue is a fundamental consideration and keystone in the safety of residents within these premises.

In the past five years just under 20% of premises inspected were deemed unsatisfactory, of those deemed unsatisfactory approximately 33% included concerns about emergency procedures and approximately 17% included concerns about training of staff both of which are critical to safe evacuation.

ADB must take sufficient account of the severe challenges of managing, staffing and evacuating care/nursing homes in case of fire. The need for building design to take account of this critical reliance on staffing levels and emergency preparation is captured within the recent studies of care sector staffing by both the CQC<sup>3</sup> and Skills for Care<sup>4</sup>. These studies show two compounding issues of both staff vacancies and

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<sup>3</sup> <https://www.cqc.org.uk/publication/state-care-202122>

<sup>4</sup> <https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/national-information/The-state-of-the-adult-social-care-sector-and-workforce-in-England.aspx>

high staff turnover, which both heighten the risk of these premises in case of an incident and intensify the need for ADB to embed management practices within it.

Anecdotal evidence from Fire Services following recent fires in care homes (and some sheltered/supported housing) has indicated that the emergency preparedness and understanding of staff and managers about evacuation is poor. In many cases emergency evacuation (and rescues in extreme cases) have had to be carried out by firefighting crews rather than by staff, which in most cases reflected errors by staff.

### *Impact Assessments*

NFCC are concerned about the lack of transparency by DLUHC on presenting their assumptions within the impact assessments, particularly for sprinklers in care homes and second staircases.

As spoken about above DLUHC seem to have completely omitted staffing and management costs from their impact assessment for the sprinklers in care homes as well as other non-monetised benefits. We would seek clarity as to why DLUHC chose to ignore these fundamental issues from their considerations.

NFCC hold concerns that DLUHC are costing policy proposals in an opaque manner and appear to be trying to push through policy on justification of obscure financial costings which have not been provided as they should be within the consultation of those policy proposals to be scrutinised by those replying.

NFCC have attempted to recreate the costings for staircase options, and have found that even when relying on assumptions at the upper end of costs, that DLUHC's presented estimates are nearly twice as high as we are able to arrive at. We present our assumptions in full below in our reply to question 28 (c).

### *Second Staircase trigger height*

NFCC are clear that height does not equal risk, yet we believe that the height limit should be set at 18m or at least 7 stories, a position we released on this topic before this consultation was published. An 18 metre or at least 7 storeys threshold would provide continuity of message and clarity across Government, aligning with definitions in the Building Safety Act as well as thresholds for certain provisions in the Fire Safety (England) Regulations and the Government's ban on the use of combustible materials.

This would also help to synchronise standards across the United Kingdom by aligning to rules in Scotland. While arguments exist for a range of thresholds, both higher and lower, 18 metres or at least 7 storeys, would bring the greatest harmonisation with the wider regulatory environment in the United Kingdom, and the greatest simplicity and certainty for industry at this time.

Government is currently in the process of transitioning to a new building safety programme and the establishment of a new Building Safety Regulator (BSR) who will oversee buildings from the 18 metres or has at least 7 storeys trigger, NFCC would seek clarification as to why DLUHC has decided that a different trigger height has

been proposed to that which is now industry accepted as a high-rise residential building. The BSR will also be responsible for assessing and issuing safety certificates, for buildings within this height threshold and we would question why they are creating a two-tier system within this new regime where buildings 18m-29m are able to have a single point of failure, despite this being something that could impact upon the ability to gain a safety case certification.

There is also the growing concern about the ownership of the Approved Documents with the movement of DLUHC staff to HSE, and the potential conflict of the Approved Documents stating something different to the policy intent and expectations of the new safety regime both of which are to our knowledge now being overseen by the same department. NFCC would welcome clarity on the ownership and oversight of the Approved Documents as well as clarity on which department will have the policy decision making oversight on them. We would again reiterate that making changes after construction to fulfil the need of a safety certificate will be more costly than if measures, such as a second staircase, had been included in the beginning.

NFCC are aware that there has been some research that has shown that natural ventilation and some configurations of smoke control, such as Mechanical Smoke Ventilation Systems (known as 'MSVS') do not work within high-rise buildings above a certain height. It is industry accepted that this height limit is 23m. It would therefore be necessary for buildings between 18m and the proposed 30m to have extra measures in order to ensure smoke control and the ability for people to evacuate in the event of an incident. These additional protections would again also be heavily reliant on good management of the buildings and maintenance of the systems.

In looking at the policy in other nations, evacuation and resident safety is one of the common themes within the justification for the policy. The Australian government stated that the purpose of the requirement for two staircases is to maximise the opportunities for people to have the means to escape from the building in an emergency. The Scottish Government also opted to include a second staircase to enhance the safety of residents even though their research showed it may not be cost beneficial to do so. In an emergency, leaving buildings can be very difficult especially in tall or large buildings, or small buildings which have a complex passageway design.

As stated earlier, England must build buildings that suit the needs of those who live in them; not force people to be suitable for the building. This also means allowing people of all capabilities to evacuate safely if they chose to do so. The stay put evacuation strategy typically applied by design teams to blocks of flats remains appropriate for most tall residential buildings that are built and maintained correctly. However, if people need to, choose to, or are instructed to evacuate, they should be able to do so safely. This is a principle that is explicit in statutory guidance, such as Approved Document B, when designing for a stay put strategy. Design teams may be designing buildings on the incorrect assumption that only the occupants of the flat where the fire starts will leave, and no one else in the building will seek to do so.

However, more people are choosing to leave when a fire occurs elsewhere in their building, and anyone who chooses to leave should be able to do so safely.

The Canadian government stated two purposes for their requirement for their stair policy. The first is to limit the probability that people will not have an alternative exit in the event that one exit is blocked or obstructed in an emergency situation, which could lead to delays in the evacuation or movement of people to a safe place, which in turn could lead to injuries or fatalities.

The second is to limit the probability that emergency responders will not have a choice of an alternative exit route in the event that one exit route is blocked or obstructed in an emergency situation, which could lead to emergency responders being delayed in gaining access to a floor area, resultant delays or ineffectiveness in emergency response operations, which could in turn lead to delays in the evacuation or movement of people to a safe place.

Physiological trials have shown there is a limit to the height firefighters can ascend to in a building before the physiological impact is likely to affect their ability to carry out firefighting operations. It is, therefore, imperative that tall buildings are designed with a suitable level of resilience without single points of failure to allow residents to evacuate in cases where firefighting operations may be delayed by defective fire safety measures in the building, such as firefighter's lifts not being available.

NFCC would also recommend that the introduction of a single staircase height threshold should be complemented by also reviewing the rules applying to evacuation lifts. Our members have reported to us many occasions where developers could easily include evacuation lifts at marginal additional cost to their projects during replacement of old lifts or in new designs. However, many choose not to, and non-worsening provisions within the Building Regulations make this difficult to enforce.

Yours sincerely,



**Gavin Tomlinson,**  
Protection & Business Safety Scrutiny Chair

## Questions

### **Sprinkler provision in new care homes: Consultation questions for the provision of sprinklers**

#### **Question 4 – Do you agree that sprinklers protection should be extended to new care homes of any height?**

Agree. The potential for multiple fatalities or injuries among staff and residents within all care homes is very high.

NFCC have consistently over many years identified the inherent risks to life from a fire in care/nursing homes and the critical role that sprinklers can play in reducing that risk. We have emphasised that due to the out of date nature of Approved Document B, the Approved Document does not meet the requirements to satisfy the building regulations and statutory fire safety guidance and so cannot effectively mitigate the catastrophic consequences of a fire in a care/nursing home.

This is due to the complex nature and reliance on management of the 'Progressive Horizontal Evacuation' strategy where people are evacuated into an adjoining fire compartment on the same level, from which they can later evacuate to a place of ultimate safety, that is common in these occupancies.

Management of care homes places a critical reliance on effective emergency planning, staff numbers and training, emergency management, decision making and actions by staff/managers. When the management is ineffective this could mean there is an over reliance on the Fire Crews attending. These types of management considerations are currently absent from building regulations statutory guidance. Management assumptions that formed part of the design and approvals process would not form part of the Regulation 38 fire safety information to that would be required by responsible person in order to inform the premises' fire risk assessment and actions that may be required to comply with their duties under the FSO. If any single one of these multiple factors fail during a fire it is very likely that staff or residents will be placed at significant risk.

NFCC believe that the essential protection measure that is demonstrated to compensate for a failure in any of these other factors, and prevent multiple fatalities or injuries, is a sprinkler system.

Sprinklers have a proven effect of limiting fire spread and this can also greatly reduce the risk to firefighters and the impact firefighting has on buildings that have progressive horizontal evacuation as it strategy.

This unique combination of risk factors and critical reliance on Protection measures, staffing and management arrangements is present in all Care/Nursing Homes irrespective of height.

The requirements of building design and protection within ADB currently do not take sufficient account of these severe challenges in management, and evacuation in

care/nursing homes. In addition to mandating sprinklers, the guidance for care home design should be reviewed in its entirety to ensure that it remains fit for purpose and is capable of meeting the functional requirements of the building regulations. The evacuation of care homes using a progressive horizontal evacuation strategy is unique within the guidance as it is not based upon the flow through an exit, rather on the ability for staff in the premises to move residents. In other buildings purpose groups, such a process would be subject to a fire engineered analysis with ongoing management requirements outlined in a fire safety strategy specifying the safe parameters of operation (e.g. staff numbers which may need to correlate to the vulnerabilities of residents, and training requirements, This means that design guidance needs to account for the likely hazards that staff may be subjected to in the event of a fire. A review of the guidance should be prioritized in order to ensure that buildings built using it can meet the functional requirements and the Responsible Person's duties under the FSO.

**Question 5 – Alternatively, would you agree with the proposal if it included a 10 bed threshold?**

Disagree. A 10 bed threshold as a single parameter is not sufficient, it would need to be subject to additional criteria demonstrating that an appropriate evacuation time is still achievable taking into account the staffing levels, ability of residents to self-evacuate and the number of floors. Without these additional safeguards even a ten-bedroom care home may pose similar challenges in evacuation and firefighting as outlined within our answer to question four.

**Question 6 – We welcome views on whether there are any exemptions you would include, what they are, and your evidence supporting their exclusion.**

NFCC would not like to see any exemptions due to the combination of risk factors and critical Protection and management arrangements present in Care/Nursing Homes irrespective of height. We do however recognise that a single storey building may enable safe evacuation within an appropriate short time if it has sufficient staffing, protected zones and exit routes. Similarly, there are also some smaller care homes in which all residents are mobile and able to self-evacuate though some may need encouragement and direction from staff. In these specific cases a limited number of upper floors (our suggested height would be ground plus two upper floors) may be acceptable if the evacuation times are demonstrated to be appropriate.

Apart from this very limited circumstance, there is no evidence that any other exemptions are safe to apply. We do not support any of the other suggested cases outlined within the consultation including larger buildings that include a small floor or annex, we believe this could lead to gaming of the system.

**Question 7 – Do you agree that Approved Document B should remove the current allowances when sprinklers are provided?**

Agree. NFCC are clear that the current allowances within the current ADB for more than 10 bedrooms per protected area and removal of the requirement for self-closing doors is an unjustifiable and is placing staff and residents at increased risk from fire.



These allowances should be removed from the current ADB as soon as possible irrespective of this sprinkler consultation and certainly removed from the new drafting even if sprinklers are to be mandated.

Evidence<sup>5</sup> demonstrates that although sprinklers will control the rapid development and growth of fire – the spread of smoke in the early stages will still occur and other bedrooms and escape corridors in the protected area will be affected. This will be significantly worse if doors are not closed and the risk of this to staff and vulnerable residents cannot be underestimated. Self-closing fire doors also provide protection to members of staff who will be required to work in this area to evacuate other residents in the event of progressive horizontal evacuation being required.

Similarly, additional bedrooms per zone will equate to longer travel distances which means that the delays and challenges of moving residents along smoke affected corridors to an adjoining safer zone will be significantly worsened. Sizing of protected areas should be cognisant of the potential risk in the area, as it may be that where there is a reliance on staff to assist the evacuation of highly dependent residents, the protected area may need to be smaller. The current Fire Safety Guidance on Residential Care highlights considerations for the limitations of travel distance based on risk. Rather than variations to existing guidance, additional information should be outlined in ADB as to how management practices can significantly impact how the functional requirements are met.

NFCC is less concerned about having more than one bed per bedroom if this is intended to cater for couples or family members in residence in the same care home. However, this allowance should also be based on the numbers and ability of staff to evacuate the zone within the appropriate timescale.

### **Question 8 – Which allowances do you think should be provided and what evidence do you have to support your view?**

NFCC do not support any allowances. There should be no allowances or reduction in the standards of fire separation, travel distances or number of compartments applied just because sprinklers are installed.

Care homes are high risk premises housing some of the most vulnerable in our society. While sprinklers are demonstrated to reduce fire development it is likely that evacuation of a whole compartment will still be necessary. The spread of smoke/gases in the early stages of fire (before a sprinkler operates) must be fully controlled by structural measures to prevent potential injury to vulnerable residents or staff during those evacuations.

NFCC recommend that Government development of additional guidance on management would be a better option than additional allowances.

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<sup>5</sup> <https://www.bafsa.org.uk/wp-content/uploads/bsk-pdf-manager/2017/09/Sprinklers-for-Safer-Living-residential-care.pdf>

**Question 9 – Do you agree that Approved Document B should recommend sprinklers to the new BS 9251:2021 standard?**

Agree. Whilst NFCC agree that this is an appropriate standard, the design of the sprinkler system should take into account any additional higher fire risk factors that are outside of the normal risks experienced in a care home environment, such as oxygen use or increased fire loading.

Similarly, the capacity and duration of water supply to the sprinkler system also needs to be able to maintain operation for a period that reflects the likely evacuation time<sup>6</sup>largest protected zone. BRE FB52 provides evidence of the cases in order to assess evacuation times which can be far longer than those expected in other purpose groups contained in ADB. NFCC therefore proposes that a minimum category 4 system is installed in accordance with BS 9251:2021 which would provide a minimum of a 60-minute duration supply, providing resilience for the period where PHE is being implemented and FRS resources are being secured and deployed. We further consider consultation should take place with the local FRS over the provision of a FRS inlet to supplement the sprinkler system for extended duration and resilience

**Question 10 – If you disagree, what other standards would you suggest, and what is your evidence to support using the alternative standards?**

We agree to question 9.

**Question 11 – Do you agree that there should be a transitional period of 6 months?**

Disagree. NFCC does not agree with a transitional period of 6 months, or any other period. There is no evidence to demonstrate that any transitional period is required to provide ‘the industry and sector at large enough time to adapt to these changes’.

Any transitional period would could provide the industry and sector at large enough time to game the transitional period, following on from the experience of the Welsh government’s sprinkler mandate in residential accommodation which lead to extensive prospective building regulations applications in order to beat the transition deadline, where premises were not then subsequently built for a number of years afterward.

We believe a transitional period provides opportunity for developers to build more new un-sprinklered care homes which will then continue to place more staff and residents at risk of death or injury due to the risk critical factors described above. (NFCC is aware of a care home provider that experienced a multiple fatality fire and total loss of a home. They were subjected to record fines following legal action, before rebuilding the home without sprinklers. It is difficult to comprehend the

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<sup>6</sup> <https://www.brebookshop.com/details.jsp?id=327132>

rationale for this decision other than on the grounds of financial benefit to the company).

The fact that this consultation is taking place, and that government is 'minded to proceed with these changes' provides enough indication that they are likely to take place, and for providers and developers to prepare for the changes by designing all new care homes with sprinklers even before the changes take place. However, this is why the current allowances need to be removed asap.

Similarly, the historic glacial pace of implementing changes to safety critical elements of ADB means that these changes are likely to be some years away in any event. NFCC would advocate a new process is adopted to enable very rapid implementation of these changes within ADB as soon as a policy decision is made to prevent the potential for the gaming of transitional provisions.

### **Question 12 – If you disagree, how long should the transition period be?**

NFCC strongly opposes any transitional period.

### **Removal of national classifications: Consultation questions for the removal of national classifications**

### **Question 13 – Do you agree that the national classifications for reaction to fire should be removed from Approved Document B?**

Somewhat Agree. NFCC do not profess to be experts in this area but have stated agree as it appears reasonable to remove the ambiguity that currently exists in having 2 separate testing routes within ADB, and we also understand the removal of the national classes has been planned for some time.

We do acknowledge this may have an impact in the shorter term of appropriate products being available as the sector transitions to the European standards, although the proposal is not a 'new' testing regime as these European standards have been available for some time, there will however be a need to engage with the sector who will be better placed to discuss these impacts to ensure there is an appropriate supply of products to market.

### **Question 14 – Do you agree that the national classifications for fire resistance should be removed from Approved Document B?**

Please refer to question 13.

### **Question 15 – If you disagree, what evidence can you provide that outlines why the national classifications are still required.**

NFCC agrees to their removal.

### **Question 16 – Do you agree that there should be a transitional period of twelve months?**

NFCC does not take an opinion on the length of time. NFCC understands that there needs to be a suitable transition period for industry to ensure that their products meet the required standards.

During the transition period (no matter the length), we would strongly recommend Government ensures that there is sufficient oversight and regulation to ensure that products on the market will not be found to cause safety issues in terms of the ongoing management of buildings.

**Question 17 - If you disagree, how long should the transition period be and what is your evidence to support a longer or shorter transition period?**

Please refer to question 16.

**Question 18 – Please outline any concerns you have about the withdrawal of the national classification with regards to fire resistance including potential impacts, such as on the fire door industry.**

Clear guidance must be produced by the government to advise industry and Responsible Persons of the status of material tested under the national classification testing to ensure that they remain fit for their intended use within buildings. Where it is perceived that there may be gaps between the two testing regimes which may lead to the potential for fire to spread more widely, then advice should be outlined with regard to the actions a Responsible Person should take.

There are clear differences in the two testing regimes meaning they cannot be easily 'mapped' and there may emerge disparities on the changeover. NFCC would encourage Government to ensure that any shortfalls within previous testing routines and during the transitional period retroactively applies the new standards. If there is doubt as to a shortfall we would urge that there is the requirement to seek the advice of a competent person.

**Staircases in residential buildings: Consultation questions for the inclusion of a new threshold for use of single staircases**

**Question 19 – Do you agree that Approved Document B should include a maximum threshold for the provision of a single staircase in residential buildings?**

Agree. England is one of the few countries in Europe, Australasia, or North America without a height limit on single staircase residential buildings. Single staircase residential buildings require additional justification and fire safety provisions beyond the requirements of existing guidance to account for the changing behaviour of occupants and modern use of buildings. However, even with additional fire safety provisions, NFCC believe there is a limit to where single staircases should be relied on.

Multiple protected staircases create more resilience to support evacuation and firefighting operations. The need for unambiguous guidance is particularly important given the clear problem with culture and competency identified across the design

and construction industry since the Grenfell Tower fire tragedy. We would also recommend that the introduction of a single staircase height threshold must also be complemented by reviewing the rules applying to evacuation lifts.

Buildings which are built, maintained, used, and managed as intended should enable residents to evacuate safely in the event of a fire, and multiple protected staircases make tall buildings safer by design.

The current system allows for many designs to rely too heavily on management practices to ensure that they work effectively in occupation. It is a dangerous omission within ADB and other building regulations that they do not account for how the building will be used in occupation including their management. This means that many buildings are only as safe as their management while, at the same time the speed of change with the way we use buildings, construction methods, and the fire loading within modern homes has outpaced design guidance.

### **Question 20 – Do you agree with our proposed threshold of 30 metres+?**

Disagree.

### **Question 21 – If you disagree with the proposed threshold, at what height do you think the threshold should be set?**

NFCC believe that the height limit should be set at 18m or at least 7 stories. An 18 metre or at least 7 storeys threshold would provide continuity of message and clarity across Government, aligning with definitions in the Building Safety Act as well as thresholds for certain provisions in the Fire Safety (England) Regulations and the Government's ban on the use of combustible materials.

This would also help to synchronise standards across the United Kingdom by aligning to rules in Scotland. While arguments exist for a range of thresholds, both higher and lower, 18 metres or has at least 7 storeys would bring the greatest harmonisation with the wider regulatory environment in the United Kingdom, and the greatest simplicity and certainty for industry at this time.

We would support the acceptable height threshold being lower in some cases dependent on factors such as the number of flats per floor and the travel distances to staircases. Whether or not multiple protected staircases should be required below 18 metres should be assessed on a case-by-case basis, with consideration of what additional measures have been proposed by the design team.

### **Question 22 – What evidence do you have to support this threshold?**

NFCC are clear that height does not equal risk yet concerns remain that statutory guidance, such as the Approved Documents, are viewed as being the maximum required standard, and that following this guidance will equate with meeting the functional requirements of the Building Regulations. While the Approved Documents themselves state that this is not the case and restrict their scope to 'common building situations', Approved Document B does not define what falls within the scope of that

term. The status of the Approved Documents is not well understood. Dame Judith found that “*the cumulative impact of the Approved Documents changes an outcome-based system of regulation to one that is often inferred by users to be prescriptive*”.

NFCC are aware that there has been some research that has shown that natural ventilation and some configurations of Mechanical Smoke Ventilation Systems (known as ‘MSVS’) do not work within high-rise buildings above a certain height. It is industry accepted that this height limit is 23m. It would therefore be necessary for buildings between 18m and the proposed 30m to have extra measures in order to ensure smoke control and the ability for people to evacuate in the event of an incident. These additional protections would again also be heavily reliant on good management of the buildings and maintenance of the systems.

Provisions within any building regulations and design must account for, recognise and mitigate for management of the building upon occupation. NFCC have been staunch in their calls that FRS’ comments within the development and design process cannot continue to be ignored by those receiving them, by introducing a duty to respond to, any comments made by the FRS and to demonstrate how they have been addressed for this reason. It is easier to rectify issues within a building that may need to be enforced against through the FSO in the design phase rather than the need to mitigate or remediate issues during occupation.

NFCC would also highlight to Government that any provisions for the management of buildings in occupation are embedded with the assumption of the lowest common denominator of management, to ensure buildings are robust enough to counteract poor management, rather than assume that buildings will be managed well. Evidence from Grenfell, as well as the Government’s experience in getting those responsible to fix and remediate unsafe buildings demonstrate a clear message that buildings must be built safely, and not assumed to be managed safely; two staircases within buildings 18m or at least seven stories will help ensure this.

We must also build buildings that suit the needs of those who live in them; not force people to be suitable for the building. This also means allowing people of all capabilities to evacuate safely if they chose to do so. The stay put evacuation strategy typically applied by design teams to blocks of flats remains appropriate for most tall residential buildings that are built and maintained correctly. However, if people need to, choose to, or are instructed to evacuate, they should be able to do so safely. This is a principle that is explicit in statutory guidance, such as Approved Document B, when designing for a stay put strategy. Design teams may be designing buildings on the incorrect assumption that only the occupants of the flat where the fire starts will leave, and no one else in the building will seek to do so. However, more people are choosing to leave when a fire occurs elsewhere in their building, and anyone who chooses to leave should be able to do so safely.

In the three years from 1<sup>st</sup> April 2019 to 31<sup>st</sup> March 2022, the London Fire Brigade reported 154 cases where 10 or more people evacuated from a block of flats of at least 6 storeys. Those 154 cases meant that nearly 8,500 residents chose to evacuate either before the London Fire Brigade arrived, or during a fire incident. These figures do not include the instances where less than 10 people evacuated.

In looking at the policy in other nations, evacuation and resident safety is one of the common themes within the justification for the policy. The Australian government stated that the purpose of the requirement for two staircases is to maximise the opportunities for people to have the means to escape from the building in an emergency. In an emergency, leaving buildings can be very difficult especially in tall or large buildings, or small buildings which have a complex passageway design.

The Canadian government stated two purposes for their requirement. The first is to limit the probability that people will not have an alternative exit in the event that one exit is blocked or obstructed in an emergency situation, which could lead to delays in the evacuation or movement of people to a safe place, which in turn could lead to injuries or fatalities.

The second is to limit the probability that emergency responders will not have a choice of an alternative exit route in the event that one exit route is blocked or obstructed in an emergency situation, which could lead to emergency responders being delayed in gaining access to a floor area, resultant delays or ineffectiveness in emergency response operations, which could in turn lead to delays in the evacuation or movement of people to a safe place.

Physiological trials have shown there is a limit to the height firefighters can ascend to in a building before the physiological impact is likely to affect their ability to carry out firefighting operations. It is, therefore, imperative that tall buildings are designed with a suitable level of resilience without single points of failure to allow residents to evacuate in cases where firefighting operations may be delayed by defective fire safety measures in the building, such as firefighter's lifts not being available.

The introduction of a single staircase height threshold should be complemented by also reviewing the rules applying to evacuation lifts. Our members have reported to us many occasions where developers could easily include evacuation lifts at marginal additional cost to their projects during replacement of old lifts or in new designs. However, many choose not to, and non-worsening provisions within the Building Regulations make this difficult to enforce.

**Question 23 – Do you agree that additional measure should be provided to ensure sufficient separation between staircases?**

Agree. NFCC believe that this is critical to ensuring that there are two independent protected staircases, and to avoid the potential for buildings to go from one possibly well designed stair to two poorly designed stairs.

This is not just in relation to how the stairs are physically separated but also how the ventilation strategy is developed and if done well this could serve for additional benefits in terms of supporting the development and management of an evacuation strategy that supports all occupants of the flats.

**Question 24 – What additional measures should be provided to ensure the appropriate separation between staircases? Please provide any additional evidence to support your view.**

NFCC believe that the fundamental consideration should be that a fire should not impact both stairs and this should consider not only the physical separation between them but also how the smoke control system will be designed which should be to minimise the impact between the spaces.

While separation in terms of distance between staircases may be important, other aspects will be equally, if not more, important. Two poorly designed, or poorly protected staircases will not provide sufficient alternatives for escape and firefighting, and are therefore not appropriate.

The ADB solutions proposed should reflect the need for each of the stairs to be capable of being used as true independent alternatives; for both firefighting and escape from anywhere in the building. To enable this all staircases should:

- Have direct access (e.g. via a dedicated protected lobby) to sufficient numbers of firefighting and evacuation lifts such that the required escape capacity is achieved, equity of escape is provided for all building users, and that sufficient resilience is in place should a lift not be available (for example through repair or maintenance).
- Be protected by a dedicated lobby which should prevent the ingress of smoke at all times (i.e. in both escape and firefighting) to enable occupants to safely await the arrival of an evacuation lift. The lobby should also provide sufficient passive fire protection and firefighting facilities to allow fire crews to instigate firefighting from either the stair or directly from the lobby itself;
- Be protected by smoke control to prevent the ingress of smoke into the lobby and stair (as above). The independent smoke control assigned to each stair/lobby/corridor combination will likely need to operate concurrently with a smoke control system protecting an adjacent stair/lobby/corridor combination to ensure that dominant airpaths are not detrimental.
- Be protected by a smoke control system which allows firefighters to move from upstream of the airpaths to approach the potential fire flat in the same direction as the airflow instigated by the smoke control system.
- Provide the staircase, lobby, corridor combination for each stair such that occupants do not need to move through a lobby associated with one staircase to access the other staircase.

Alongside this, ADB should have a clear scope and clear definition of where it can (and more importantly cannot) be used.

If the principles above are fulfilled, staircases in close proximity may in fact be considered true alternatives, and therefore may be appropriate.

**Question 25 – Do you have a view on how long the transitional should be, and what evidence do you have to support your proposed transition?**

NFCC do not support a transitional arrangement. As for sprinklers, we believe a transitional period provides opportunity for developers to build buildings without these staircase provisions.



The fact that this consultation is taking place, and that government is 'minded to proceed with these changes' provides enough indication that they are likely to take place, and for providers and developers to prepare for the changes. We would also highlight the many instances that we have been made aware of where buildings have been challenged within the new system on the single point of failure of a single staircase in buildings above 18m or at least 7 storeys, and the risk they run of not being able to gain a safety case certificate upon completion. This issue is not new to the industry and therefore they should already be preparing. We would also highlight the organisations such as RIBA, whose members are responsible for the design of many of these high rise premises have had a call for two staircases for many years at a height well below the Government's proposed 30m.

## **Paragraph 10.6 and 10.7 – call for evidence**

### **Question 26 – Do you agree further consideration is needed to clarify the paragraph?**

Agree. NFCC believe there are areas that need further clarification within the paragraph, but would quantify that our answer below may not address all areas of needed clarification.

### **Question 27 – If you agree, please outline what materials would you cover in the paragraphs and what is your evidence to support this?**

One area of potential confusion is that the restrictions regarding the use of combustible insulation and filler material as stated in paragraphs 10.6 and 10.7 do not apply to “to masonry cavity wall construction which complies with Diagram 8.2 in Section 8.”

Diagram 8.2 shows a traditional twin skin masonry arrangement which is representative of many existing buildings. Should buildings that are already constructed in this manner undergo works including insulation and cladding as part of a refurbishment, would they be exempt from the requirements? Whilst the intent is clear, NFCC believe there is sufficient ambiguity within these clauses to allow combustible insulation material to be used in these instances.

Whilst this concern would mostly be applicable to work carried out on existing buildings - twin skin masonry plus additional insulation and cladding over the top is unlikely in a new build - it remains an area that is open to misinterpretation.

## **Assessment of impacts**

### **Question 28 – Please provide any additional evidence on costs, risks and benefits which should be considered in an assessment of impacts in the following areas.**

NFCC have detailed below additional evidence to the impact assessments which are embedded within the consultation. However, we are very disappointed at the way the impact assessments for these critical and significantly important changes have been assessed and represented within this consultation. They are not transparent and

NFCC were not able to effectively assess what was additional evidence as we are not aware of the basis and assumptions of the impacts as presented by DLUHC.

NFCC are also concerned that the Government's impact assessments are based upon major incidences and not on 'near misses' where but for FRS intervention there would have been a major incident or disaster including the loss of lives. We must learn from the near misses and not discount them as they are indicators of potential future problems or the next big event and ensure there are proper protections within these areas to mitigate and prevent them from happening rather than retrofit and retrospectively fix the problems.

NFCC would additionally highlight the type of evidence and examples that were submitted for government partners in 2019 as below.

### **Hertfordshire Care Homes Inspection Program**

#### **Hertfordshire Care Homes Inspection Program**

- In April 2017 Hertfordshire fire crews attended a serious fire at the Newgrange Residential Care Home in Cheshunt. The incident resulted in the deaths of two elderly residents.
- Fire investigation led to the conclusion that insufficient compartmentation in the loft space had contributed significantly to the fire spread and as a result, when the first fire crew arrived the roof was already fully involved in fire.
- Hertfordshire Fire & Rescue Service Fire Protection Department immediately commenced a program of inspection of all Residential Care Homes in the County
- Approximately two thirds of these homes have been found to have fire safety deficiencies.
- Of these, 23 were found to have insufficient compartmentation in the roof space and as such their progressive horizontal evacuation (PHE) strategy was unacceptable. Inspection staff have worked with each premises to have the required works complete and, in all cases, staff levels were increased.
- Hertfordshire now categorise Care Homes as High Risk and as such the pre-determined attendance of the service has been increased.

### **London Fire Brigade Care Homes Inspection Program**

#### **London Fire Brigade – Auditing of Care Homes**

Following a number of fires in 2017/18 that raised concerns that the management of fire safety arrangements in these premises may need review, the London Fire Brigade (LFB) carried out detailed inspections of 177 properties in late 2018.

These inspections identified a number of fire safety failures:

- 57% of the care homes inspected received a formal notification from LFB to address these issues.
- In 45% the Fire Risk Assessment was not suitable or sufficiently comprehensive. Many fire risk assessments were found to have been carried out by in house managers and demonstrated a lack of understanding and information about basic fire safety principles. However, it was also worrying that some which had been done by a Fire Risk Assessor

did not always clearly and sufficiently cover the issues of evacuation strategy and numbers of staff required in a comprehensive way.

- The Fire Risk Assessors in some homes employing progressive horizontal evacuation had also not recognised the importance of a comprehensive survey of the premises compartmentation and fire resisting separation. When sampled, the fire resisting separation of the building was found not to support this type of emergency evacuation strategy. In these instances, it was not highlighted in the FRA as a life safety risk.
- Roof voids were also often not considered by fire risk assessors, particularly when they were unable to gain access easily.
- 14% of the 177 care homes inspected had evidence of poor emergency planning, or a potential lack of staff to implement the plan.
- There was also evidence in some cases that management misunderstood/underestimated the importance of sufficient staffing levels, particularly during evening/night shifts, in order to carry out a safe evacuation of the premises in the event of fire.
- 10% of the 177 care homes had evidence of inadequate training for staff/managers.
- 14% of the 177 care homes inspected had failures relating to their protected escape corridors and 29% had one or more failures relating to fire doors within their premises.
- Following these targeted audits, in January 2019 AC Daly wrote to all care homes in London that are registered with CQC (1,389 in total). The letter highlighted a number of fire safety issues that were identified. A similar letter was sent to the Chief Executives at all the London Boroughs in respect of care homes they operate or are run on their behalf.

### **a) Sprinklers in Care Homes and in housing for vulnerable people, regardless of building height**

NFCC believe that the impact analysis within this section of the consultation is fundamentally flawed in that it focuses only on limited financial estimates and concludes that there is 'no overall cost benefit either for life safety or property protection'. This is based simply on a decrease in fire incidents and associated deaths and injuries. We do not believe that the cost of proper staffing and management have been considered and factored into the fiscal costings of this impact assessment.

NFCC are also concerned about the depiction of CFOA guidance and the messaging that it demonstrated that the risk of care home fires is to property and not life. Our message from that research was that sprinklers "reduce the risk to life but also reduce the risk of property damage caused by fire."

It is recognised that major fires with loss of life are relatively infrequent and that the UK has escaped a major loss of life in a care home fire for some years. The last being in 2017 with the Newgrange Care Home which resulted in 2 fatalities and a number of seriously injured. It was only due to rapid attendance and exceptional action by fire crews that this incident did not result in many more fatalities – and

similar critical rescues have been required to avoid tragedy at other care home incidents nationally. This infrequency of major loss and fatality fires has created complacency in government guidance and policy making around fire risk in these occupancies and the critical value that sprinklers can play as a control measure.

However, the national Fire Statistics gathered by the Home Office should be analysed by DLUHC and will provide evidence of the high number of fires in care homes which result in injuries, evacuations and rescues. Each of these fires had the potential, had circumstances been slightly different, to become a major fire with multiple fatalities.

This indicates that the potential impact on society is still elevated – whether from the perspective of multiple fatalities, loss of a critical community asset, or financial implications for private or public care/housing providers.

### Enforcement

Home Office statistics on Enforcement activity for the last 5 year gathered from Fire and Rescue Services demonstrate that non-compliance with the Fire Safety legislation and risk is still very common in these occupancies.

Over that period 28525 audits were completed and the statistics below demonstrate that some of the risk factors described above in answer to question 4 which could contribute to a catastrophic incident are still prevalent.

In 25 cases Prohibition Notices were issued because there was immediate and serious risk to life, and these Notices would have restricted or prohibited use of parts (or the whole) of the home.

In 8402 cases (19.5%) the audit outcomes were recorded as unsatisfactory. This means that in all those cases a degree of risk was present that required a formal notice or letter was sent expressing concern and listing fire safety failures in protection or management arrangements that needed remediation. Examples are given below.

In 2217 cases (26.3%) these notices included concerns about fire detection and alarm equipment.

In 4394 cases (52.2%) these notices included concerns about emergency routes and exits.

In 2754 cases (32.7%) these notices included concerns about emergency procedures, which as described above are critical to safe evacuation particularly in care homes.

In 1446 cases (17.2%) these notices included concerns about training of staff, which again is critical to safe evacuation.

These statistics provide evidence that the protection provided by the Fire Safety Order is not sufficient to keep vulnerable and dependent residents (and staff) safe from fire in these buildings. The building design (and therefore ADB requirements) has to compensate for this shortfall by ensuring that the very highest fire Protection arrangements are included (including sprinklers) to ensure their safe use.

## Staffing

The requirements of building design and protection enshrined within ADB currently do not take sufficient account of the severe challenges of managing, staffing and evacuating care/nursing homes in case of fire. Additional evidence for the need for building design to take account of this critical reliance on staffing levels and emergency preparation is captured within the recent studies of care sector staffing by both the CQC<sup>7</sup> and Skills for Care<sup>8</sup>.

These demonstrate that vacancy rates and turnover rates for care home staff and registered managers are at record levels and still increasing. For 2021/22 these were at 8.2% for staff and 12.8% for managers. Equally concerning is the turnover rates in the sector which are at 32.2% for staff and 26.3% for managers.

This demonstrates that, at any given time, staffing levels are very likely to be lower than the optimum number for effective evacuation and a significant proportion of staff are likely to be new in post and less familiar with emergency procedures and evacuation.

The projections from Skills for Care on future demographic and population changes indicate upward trends in demand for adult social care, and continuing difficulty in meeting those demands in staffing terms.

The CQC report also indicates that 'providers are struggling desperately to recruit and retain staff' and there is zero evidence within that report of any change in this situation likely to occur.

Anecdotal evidence from Fire Services following recent fires in care homes (and some sheltered/supported housing) has indicated that the emergency preparedness and understanding of staff and managers about evacuation is poor. In many cases emergency evacuation (and rescues in extreme cases) have had to be carried out by firefighting crews rather than by staff, which in most cases reflected errors by staff. These anecdotal examples are reflective and symptomatic of the risks discussed above, and also of the levels of enforcement action discussed above.

## Non monetised benefits:

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<sup>7</sup> <https://www.cqc.org.uk/publication/state-care-202122>

<sup>8</sup> <https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/national-information/The-state-of-the-adult-social-care-sector-and-workforce-in-England.aspx>

NFCC recognise that due to limited evidence that non-monetised benefits have not been estimated. We would highlight some anecdotal non-monetised benefits of sprinklers in all care homes:

1. Improved wellbeing of residents and wider family members from reduced concern about future fires
2. Reduced business interruption for care homes, as sprinklers will prevent the spread of a fire.
3. Reduced social impacts as a result of resident relocation in the event of major property damage,
4. Prevention of damage to residents' belongings and resulting distress
5. Reduced rehoming costs due to prevention of major property damage.
6. Changes to evacuation strategy.

### **b) removing the national classification (BS 476 series) from Approved Document B**

NFCC do not have any further comment on the assumptions laid out by Government within this section of the consultation.

### **c) Residential Buildings above 30m in height being recommended to include 2 staircases**

NFCC do not agree with the costings within this impact assessment and seek further clarity of how these figures were reached.

NFCC estimates this policy would cost around £84.11m per year compared to DLUHC's estimate of £160m per year, based on the size of a staircase allowing for a full firefighting shaft.

This would represent a proportionately small reduction to the £5.63bn of profits that developers would otherwise make over the 10 year period.

NFCC do not support a transition period, and given that multiple stairs are already being raised as an issue for safety cases we do not believe that redrafting should be a cost embedded within an impact assessment.

We also hold significant concerns on the softer community and resident benefits outlined within this consultation.

The figures below do not take into account savings that may be realised to building management as a result of the reduction in overall risk in managing the safety of the building in occupation, and reducing management burdens.

As highlighted within our response to the questions around two staircases, engineered buildings, as many modern buildings are, rely on competent and thorough management. The cost of managing these buildings and the benefits of having two staircases on the management is not factored.

We also do not see evidence of the cost of remediation or mitigation of these buildings if they are not able to obtain a safety certificate due to having a single point of failure.

The most troubling impact within this impact assessment is the reference to 'wellbeing improvement' and the need for residents to 'value' a second staircase in order for this to become cost neutral. This seems like a dangerous precedent and basis on which to make policy, residents should not have to value something that contributes to their ability to live within a building.

Most members of the public on deciding where to live, will do so on the assumption that the building regulations have been written on the basis of ensuring the safety of their homes. Most consumers would be unlikely to appreciate that the design guidance underpinning England's building regulations is decades out of date, and that many of the thresholds within it are based on seriously out of date assumptions and values about peoples' mobility and the way we use buildings today. If this consultation were put to consumers in these terms, that when purchasing a house if they could choose to pay £168 a year more to own a property which meets modern day international minimum benchmarks of safety, as opposed to an approach which was designed 70 years ago for a very different context, many may choose a different response.

Being safe within your own home, as well as being able to safely and easily evacuate during an incident is a fundamental right, and something that should be a given, and not a valued extra. NFCC would strongly urge Government to re-evaluate a policy intention that requires the safety of people within their own homes to have fiscal and monetised 'cost neutrality' in order to be considered, even if the cost is hypothetical.

NFCC would also caution Government about taking a stance against stairs based on costs when the costs would be a small percentage of the target profits for developers, based on their publicly available current records of profit.

NFCC call on the Government to provide the figures which sit behind their estimates so that they may be scrutinised properly.

<p>Number of new HRRBs per year</p>	<p>Original DLUHC estimates for 18m+: 410 per year</p> <p>HSE Estimate (as done for costings of new regime) 18m+: 339</p> <p>Current DLUHC estimate 18m+: 435</p>	<p><a href="#">Building Safety Programme: monthly data release - January 2023 (publishing.service.gov.uk)</a>: estimates that 32% of existing buildings at least 7 storeys high, are also greater than or equal to 30m.</p>
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		Provides a proxy rate of 32%.  New builds 30m+ per year: 139
Cost per m2  (Building Cost Information Service (BCIS) Online 2023 Price)	London:  £2,445 (mean)  £1,508 (lowest)  £7,110 (highest)  £1,996 (lower quartile)  £2,297 (median)  £2,623 (upper quartile)	Northern Region:  £1,848 (mean)  £1,140 (lowest)  £5,376 (highest)  £1,509 (lower quartile)  £1,737 (median)  £1,983 (upper quartile)
	We have chosen to use an average of the median across London and the Northern Region = <b>£2,017 per m<sup>2</sup></b>	
Number of storeys	We have taken an average of a storey being c.3m in height.	18m building: 6 storeys  30m building: 10 storeys
Number of dwellings <sup>9</sup>	18m-29m: Average 52 Dwellings  30m above: Average 81 dwellings	
Target profits per dwelling	According to anecdotal evidence from industry partners and our members, it is generally accepted that developers aim for a profit of £50k per dwelling.  Based on this figure that would result in available profits of £5.63bn over ten years, for 30m buildings, and £11.3bn for 18m buildings.	
Floor space m <sup>2</sup> per floor for a stair	12-15m <sup>2</sup> (standard stair)  30m <sup>2</sup> (full firefighting shaft)	
Cost per storey	Standard stair size: 12-15m <sup>2</sup> = Per storey £24,204 - £30,255.  Full Firefighting shaft size: 30m <sup>2</sup> = £60,510	

<sup>9</sup> Building Safety Programme Monthly Data Release



<p>Cost of additional staircase per building</p>	<p>Cost range for a 10 storey buildings depending on what type of staircase between: £242,040 to £605,100.</p> <p>The highest estimate of £605,100 available assumes the second stair would be a full firefighting shaft, with floorspace available for a lift and lobby.</p> <p>Taking the current DLUHC estimate that 32% of HRRBs are 30m or above, the projected number of new HRRBs 30m+ = 139 per year.</p> <p>This would mean the cost of this proposal is around £84.11m a year, compared to DLUHC's estimate of £160m per year.</p>
<p>10 year estimate</p>	<p>£605.1k X 139 buildings X 10 years = £84.1m or £841m over ten years.</p> <p>This is not an investment of new money, but a reduction to the £5.63bn of profits that developers would otherwise make.</p>
<p>Compared to DLUHC estimate of £1.6bn</p>	<p>DLUHC estimates their preferred option will cost nearly twice the amount estimated above.</p> <p>DLUHC estimate: £1,600m over a 10 year period.</p> <p>No breakdown of DLUHC's assumptions are available to be scrutinised.</p>

**Question 29 - Are you aware of any particular equalities impacts for these proposals? How could any adverse impact be reduced and are there any ways we could better advance equality of opportunity or foster good relations between people who share a protected characteristic and those who do not? Please provide evidence to support your response.**

Yes. NFCC do not believe that Government has properly considered the impact on those with impaired mobility or disabilities within their considerations for a second staircase and height limit.

As demonstrated within our response to those questions, one of the main and major considerations for a second staircase is the egressability of that building. Buildings must be built to suit the needs of those who live within them, not people be suitable for the building.

**Question 30 – Are you aware of any particular environmental impacts for these proposals? How could any adverse impact be reduced and are there any opportunities to advance positive environmental impacts? Please provide evidence to support your response.**

NFCC believe that sprinkler recommendations within this consultation will have positive impact upon the environment and sustainability. Studies have shown that where sprinklers are installed there is a decrease in the amount of water used by local FRS. Furthermore sprinklered fires are estimated to release less carbon emissions compared with an un-sprinklered building of the same type. The potential environmental impacts of fire result from the use of water for fire fighting, and the contaminated run-off from fire fighting tactics, and greenhouse gas emissions and other pollutants emitted when a fire breaks out. Sprinklers can mitigate the impact and release of these contaminants.