NFCC
National Fire
Chiefs Council

The professional voice of the UK Fire & Rescue Service

Provision of multiple routes for evacuation of residential buildings – NFCC Opinion Paper

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Summary

This paper outlines National Fire Chief's Council's (NFCC) opinions on the design of high-rise residential buildings with multiple escape routes and outlines areas that fire and rescue services (FRS) should consider when reviewing designs for these buildings.

Following the commencement of the new Building Safety Regime in addition to recent Government policy announcements about stairways, this opinion paper has been produced in lieu of any official statutory or operational guidance being provided by the Government or the new Building Safety Regulator.

NFCCs opinion is grouped into three key objectives:

I. That stairways are independent from each other and that a single fire cannot impact on multiple escape routes.

II. Safe egress is provided for all building users, including those who either would not be able to, or would find it difficult to descend stairs.

III. Suitable resilience and flexibility is provided for firefighting. This should include appropriate access and facilities, with sufficient resilience and redundancy in the design.

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1. Introduction and background

1.1. In July 2023, the Secretary of State for the Department for Levelling Up, Housing and Communities, Michael Gove, announced that the Government intended to mandate a minimum of two stairways in all high-rise residential buildings greater than 18m in height. It has since been clarified that the requirement for multiple stairways over 18m will be achieved via amendments to Approved Document B. This will be followed by a transitional period of 30 months during which design teams have the choice of using the updated version or the existing version of that guidance. This opinion paper may assist in cases where local policy or requirements (e.g. the London Plan 2021 and the circumstances in which it requires evacuation lifts) have greater expectations than the solutions provided in the existing Approved Documents.

1.2. In lieu of any official statutory or operational guidance being provided by the Government or the new Building Safety Regulator NFCC and individual FRSs are regularly being asked for opinion on the protection and purpose of multiple stairways, the requirement for evacuation lifts in tall residential buildings and how the related design and management should be developed. This paper provides that opinion from NFCC to enable a consistent approach for FRS (in England) to adopt.

1.3. Although the Ministerial announcement focussed on stairs, this paper treats a stair to mean escape routes. As such, stairs are treated to mean stairs and evacuation lifts, in order to provide means of escape for those requiring level access into buildings. Currently there is no published guidance for specific design solutions relating to how evacuation lifts and the requirement of multiple stairways above 18m can be incorporated into the overall means of escape design. Until such time that guidance is published, this paper outlines the NFCC opinion on escape and firefighters' access provisions in new purpose-built blocks of flats that FRSs should be challenging design teams to justify. The key areas that are highlighted focus on the design and protection of multiple stairways for new residential buildings, the provision of evacuation lifts, and the resilience and flexibility of design for firefighting where existing guidance does not provide recommended/appropriate solutions.

1.4. It is noted that the Building Safety Regulator strategic plan 2023-2026' has now been published which discusses cost benefit analysis for matters including 'stairs and ramps in relevant buildings'. It is not clear how this will link in with the fundamental review of Approved Documents, specifically with regards to second stairways and when will there be clarity on the timeline for this work.

1.5. The purpose of this paper is not to fulfil a design role and NFCC takes no design liability for the opinions contained in the paper. The aim is to highlight areas that FRS should request that building designers take into account for means of escape and firefighting in new blocks of flats.

1.6. This is not building design guidance, holds no statutory footing, and has not been subject to consultation outside the FRS. This paper sets out what NFCC consider the core objectives that FRSs should expect to be justified for the stairway and lift(s) when designing and approving new tall residential buildings[1].

1.7. The opinions in this paper are intended to support fire safety regulators in their professional judgement and decision making when assessing new consultations. Such assessments should consider both the design and future occupation of a building. This paper is not intended to align with a single regulatory regime such as planning, the Building Regulations 2010 or the existing or new requirements of the Fire Safety Order or the Building Safety Act in-occupation. This paper aims to support FRSs in highlighting the types of considerations they can apply when assessing all of these requirements holistically.

1.8. Without specific building design guidance, this paper sets out aspects that may be appropriate to be considered in a holistic design following a framework such as that set out in BS 7974[2]. Poorly designed multiple stairways (and/or evacuation lift provision) will offer little benefit over what is currently within guidance such as the existing version of Approved Document B (ADB)[3] or BS 9991[4].

1.9. This paper will be reviewed upon publication of revised guidance (ADB revision) and/or if further direction is provided by Government policy.

1.10. This paper does not cover other fire safety related aspects of design, and NFCC and FRSs would expect design teams to satisfy themselves and the relevant approving authorities that the overall design meets the Building Regulations 2010 (functional requirements) and all other relevant legislation.

1.11. This paper is predicated on residential designs based on a stay put strategy and as such do not rely on rescue by the FRS as the primary means by which residents can escape a building in the event of a fire. NFCC's current advice on stay put evacuation strategies can be found on our website.[5] Designs incorporating a stay put strategy also

[1] It is recognised that due to local planning policy and related requirements there may be some local variations of the objectives in this paper accepted by fire and rescue services. Any such local variations may be captured in a local appendix to this document.
[2] BS 7974:2019 Application of fire safety engineering principles to the design of buildings. Code of practice
[3] Approved Document B: Fire safety - Volume 1: Dwellings (2019 edition incorporating 2020 and 2022 amendments)
[4] BS 9991:2015 Fire safety in the design, management and use of residential buildings. Code of practice
[5] For further information on NFCC's position in relation to evacuations in buildings designed to maintain a stay put strategy, please see our response to the 2022 Home Office consultation on Emergency Evacuation Information Sharing.

include the requirement to provide a safe means to escape should residents choose to leave their building, or if they are directed to leave by the emergency services[6].

1.12. For the purposes of this paper, tall buildings are those between 18 and 45m in height. Anything above this height is outside the scope of this paper.

2. Why this paper is needed

2.1. NFCC welcomes the increased focus on the need for evacuation lifts and multiple stairways in new tall residential buildings and have published a position statement stating that multiple stairways should be incorporated in such buildings with a floor height above 18m.

2.2. Feedback received by some FRSs, following engagement with residential community groups, has indicated strong support for more than one stairway in residential blocks of flats. This is linked to their individual and collective sense of safety, noting that 'fear of fire' has not been measured in the same way that 'fear of crime' has been previously[7].

2.3. While there may still be differences of opinion in the industry with regard to detailed technical design, there appears to be a collective view amongst a variety of stakeholders that multiple escape routes suitable for all occupants should be provided in tall residential buildings.

2.4. Currently there is a lack of guidance on how to practically achieve this in new designs, and FRSs have been presented with large variations in terms of design teams' interpretation of the intended purpose of the multiple escape routes. In some cases, the design has been well thought through. However, in many others, the design teams appear to be attempting to apply ADB in its current form without acknowledging there is a live discussion around:

- the design of means of escape and the principle of equity of escape
- how the building design supports the accountable person in demonstrating that their duties are being met to regulatory bodies once occupied, and
- incorporating local requirements, such as the London Plan, into a design.

[6] Paragraph 3.3 Approved Document B: Fire safety - Volume 1: Dwellings (2019 edition incorporating 2020 and 2022 amendments)
[7] https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/publicperceptionsofcrimeinenglandandwales/yearendingmarch2016

2.5. Individual FRSs have reported approaches from design teams, developers and Building Control Bodies seeking advice or opinion on aspects such as layout and protection to stairways and the provision of evacuation lifts. NFCC (and FRSs) are uniquely placed to offer our opinion given the experience of interacting with buildings throughout their whole lifecycle, from being consulted during design and construction, through visiting buildings from a regulatory and fire prevention perspective once occupied, to attending fires and emergencies when the occur.

2.6. The focus on the provision of multiple stairways has highlighted differences of opinion within the industry on the purpose of stairs. Some assume that the only benefit of additional stairs is in providing an option for escape. NFCC believe that all stairways should ideally provide full flexibility for both escape and firefighting.

2.7. In a fire, a single dedicated firefighting stairway limits tactical response when considering both active firefighting, evacuation and rescue. In our view, firefighters would benefit from the choice of stairs on initial attendance. This will allow the firefighters to opt for the most appropriate stair which will often be that which is the closest to the fire. Multiple stairways will also provide the potential to use a second line of fire attack by utilising both stairways in the event of changing fire conditions.

2.8. A single available stairway also limits egress options if only one stairway remains available for that purpose. If occupants need to (or choose to) escape during a fire incident, they could be at further risk by escaping into the only stair if that is being used for firefighting at the same time. The amount of operational kit required for high rise firefighting is significant, and will be being actively used in corridors, lobbies and stairs. Escaping past that operational firefighting kit such as extensive hose can expose escaping occupants to risk of slips, trips and falls either when the hose (and other equipment) are stationary, or when the equipment is being moved about rapidly by firefighters. Therefore, NFCC believes that all stairways should be designed to provide options for escape and firefighting to allow for the greatest flexibility during a fire incident for attending fire crews and for those wishing to escape the building.

3. Three principal objectives

3.1. NFCC considers that the combination of the stairway(s), evacuation lifts, firefighters' lifts and associated protection measures should fulfil three principal objectives within the overall fire strategy for the building:

- Objective 1: Stairways should be independent from each other, and a single fire cannot impact on multiple escape routes.

- Objective 2: Safe egress should be provided for all building users, including those who either would not be able to, or would find it difficult to descend stairs.

- Objective 3: Resilience and flexibility is provided for firefighting. This should include appropriate access and facilities, with sufficient resilience and redundancy in the design.

3.2. These objectives consider both the design and occupation of a building and are not intended to align with a specific regulatory regime, such as planning, Building Regulations or in-occupation approval/compliance, but all of those together. This reflects the FRS role within the statutory consultation process on Building Regulations whereby observations can be provided in regard to how the design meets Building Regulations but primarily comments are provided in regard to future compliance with applicable fire safety legislation upon occupation.

3.3. Critically, we believe that tall residential designs require suitable analysis, must consider the building and its occupants holistically, and should provide robust and reliable protection to both occupants and firefighters.

3.4. In the current sector wide discussion of additional stairways in tall buildings, the use of ‘stair’ or ‘stairway’ should also include the provision of a means of escape for those requiring level access such as evacuation lifts. This means that design guidance (such as ADB or BS 9991) will need to be updated to ensure that stairways, lifts and associated lobbies are incorporated in future design guidance.

3.5. Future design guidance should make clear that it is not appropriate for the corridor or stair landings to be considered a temporary waiting area or refuge, as occupants of these areas may be exposed to dangerous smoke from the opening of the flat of fire origin’s door. Similarly, an evacuation lift should not open onto a residential corridor, as it may mean residents would have to wait in an area affected.

4. Objective 1 – Stairways should be independent from each other

4.1. The fire strategy for a tall residential building should ensure that stairways are independent of each other and that a single fire cannot impact on multiple stairways. One method of achieving this would be by following a fire engineering framework such as that set out in BS 7974, although FRS staff may not be able to contribute to a qualitative design review (QDR) in all cases.

To achieve this objective, FRSs should expect designers to demonstrate that:

a) The stairways are adequately separated by fire resisting construction.

b) Multiple stairways are not served by a single lobby (firefighting or evacuation lobby).

c) An escaping occupant should not have to move through a lobby associated with one stairway to get to a lobby associated with another stairway.

d) The stairways are protected by an appropriate smoke control system (see Objective 2 and Objective 3, below).

4.2. To assist in achieving this objective, it is likely designers will need to demonstrate that all stairways are to be protected by 120mins fire resisting construction (which is the provision expected of protecting a firefighting shaft in design guidance). FRSs should also expect that all stairways will be configured with a lobby between the stairway and corridor, and should include a cross corridor fire door between stairways.

Evacuation Lobbies

4.3. Lobbies in residential buildings may have different objectives in some circumstances, however, in many cases the lobbies may be simultaneously protecting the stairway, providing a safe waiting space for the evacuation lift, and serving as a staging point for firefighting.

4.4. For the purposes of this paper, a lobby does not have direct access to flats or other accommodation and will provide a safe gathering space for awaiting the arrival of an evacuation lift, or as a staging space for attending fire crews. Lobbies protecting the stairway from the ingress of smoke, should also provide additional protection to escaping occupants, firefighters and the lift shaft. The expectation is that the lobbies will adjoin protected corridors which then provide access to flats.

4.5. Where evacuation lifts are present, FRSs should expect the lobby serving these lifts to be protected from the ingress of smoke for the period for which the lifts need to be used. This provides anyone who wants, or needs to, use the evacuation lift a safe space, free from heat and smoke, to safely await the lift arrival. FRSs should expect that the design team demonstrates that the system chosen is appropriate for the specific context in which it is installed and that the proposed maintenance regime is sufficient to maintain the system in appropriate working order.

4.6. Traditionally, residential corridors have not been afforded this performance expectation (to remain clear of smoke) with corridors described in existing guidance (e.g. ADB and BS 9991) as being designed with the combination of restricted travel distances and including smoke control with the primary purpose of protecting the stairway from the ingress of smoke. In these instances, the inferred result may be an expectation of smoke and heat in the common corridors which in some instances could be considerable dependent on the smoke control design.

4.7. Therefore, accepting that residential common corridors can, or will, have heat and smoke in them, makes them unsuitable for people awaiting the arrival of an evacuation lift as tenable conditions are not assured.

4.8. Any design which seeks to include extended travel distances must take specific account of residents with reduced mobility or additional needs. NFCC has recommended to government that future guidance on building design should also look to demonstrate the equity of escape, and whether extended corridors pose problems in terms of egressibility for those with any impairments which may impact on their making an escape.

5. Objective 2 – Safe egress is provided for all building users

5.1. The fire strategy for a tall residential building should ensure that safe egress is provided for all building users, including those who either won't be able to, or would find it difficult to descend stairs. One method of achieving this would be by following a fire engineering framework such as that set out in BS 7974, although FRS staff may not be able to contribute to a qualitative design review (QDR) in all cases.

5.2. To achieve this objective, FRSs should expect designers to demonstrate that:

a) There is a sufficient number of evacuation lifts for the potential building users, and to account for those times when a lift is unavailable (note: In practice, this means that there will generally be more than one evacuation lift required per stair core or evacuation lobby– Objective 3).

b) Every evacuation lift is protected by a lobby.

c) Every lobby serving an evacuation lift is protected by a smoke control system; the smoke control system should not extract from that lobby.

d) Where management is required to assist, that the expectations for this are clearly stated and does not set unrealistic expectations for when the building is occupied.

5.3. In terms of the design of new buildings, NFCC believes that this objective will assist designers towards satisfying the functional requirements of the Building Regulations, namely:

Means of warning and escape
B1. The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of

fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times.

5.4. ADB points out that in the Secretary of State's view requirement B1 is met by factors such as "All people can escape to a place of safety without external assistance" and that "Escape routes are suitably located, sufficient in number and of adequate capacity." In respect of buildings being inclusive for all building users, ADB says:

> "*People, regardless of ability, age or gender, should be able to access buildings and use their facilities. The fire safety measures incorporated into a building should take account of the needs of everyone who may access the building, both as visitors and as people who live or work in it. It is not appropriate, except in exceptional circumstances, to assume that certain groups of people will be excluded from a building because of its use*.
>
> *The provisions in this approved document are considered to be of a reasonable standard for most buildings. However, some people's specific needs might not be addressed. In some situations, additional measures may be needed to accommodate these needs. This should be done on a case-by-case basis*".

5.5. However, the design guidance provided in ADB and BS9991 currently allows for single stairways alongside no expectation for the provision of evacuation lifts (or is at least silent on the expected design solution to support this). NFCC believes these documents are therefore significantly out of date, and cannot solely be relied upon for appropriate modern building design.

5.6. Therefore, in terms of meeting the functional requirements for means of escape, the design guidance outlined in ADB and BS9991 may not be suitable, and building control applications relying solely on this design guidance should be challenged on this basis.

5.7. Furthermore, Article 14(2)(a) of the Regulatory Reform (Fire Safety) Order 2005 states that "emergency routes and exits must lead as directly as possible to a place of safety", with 'a place of safety' defined in Article 2 as "a safe area beyond the premises". This accords with the definition of a 'place of ultimate safety' used in the Fire Safety Risk Assessment: Means of Escape for Disabled People guide and, when read alongside ADB, demonstrates that all residents and visitors should be able to escape to a place of safety outside the building without external assistance.

5.8. In England, following the Building Safety Act 2022, new designs must outline their evacuation strategy as part of the Fire and Emergency File. A design following the existing guidance in ADB or BS 9991 should outline how it meets the requirements for the evacuation strategy accounting for all residents once a building is occupied.

5.9. With regard to the provision of stairways themselves, ADB already requires more than one stair for some buildings by virtue of the travel distance restrictions in the single direction common corridors or size of the floor plate. However, this is commonly varied by analysis of the corridor escape length only (commonly using the average walking speed of the population and without an additional stair), or alternatively BS 9991 is used for the design which allows for extended single direction travel distances (without the provision of additional stair).

5.10. If the stairways are adjacent to each other, FRS may consider that one bank of evacuation lifts (appropriately separated into 2 protected lobbies by fire resisting construction) may be sufficient to serve both stair cores. If the stairways are separated by distance, there may be more lifts required to serve each stair core. (Note: a design using only one bank of lifts should only be applied where the design and its layout have been demonstrated to meet all of the objectives highlighted in this paper).

Smoke control for lobbies (serving stairs and evacuation lifts)

5.11. The principle of limiting corridor lengths for extended corridors and extracting heat and smoke away from the stairway is described in the BS7346-8:2013[8] and Smoke Control Association Residential Corridor Guide for Single Direction Common Residential Corridors[9]. In NFCC's opinion, extracting smoke away from the stairway should be considered a general recommendation for all common corridors or lobbies because of the benefit of providing a relatively clean air path for both means of escape and firefighters.

5.12. Firefighting within corridors where the smoke control extracts towards the stairway can present exceptionally onerous and potentially dangerous conditions for firefighters. Extracting towards lobbies/stairs can place residents and firefighters in the path of the oncoming smoke and results in them moving through an area of potentially intense heat. Essentially, the corridor itself can become the fire compartment once the flat front door is either breached by the fire or opened by escaping residents or by firefighters.

5.13. Conversely, extracting the heat and smoke away from the stairway provides firefighters with an approach path which is relatively free of heat and smoke, and provides a safe retreat path back to the lobby or stair.

5.14. Furthermore, the location of the heat and smoke extract point should consider the time that any occupants might be in that area. It is unlikely that extracting from a lobby itself

[8] Clause 6.4.9 of BS 7346-8:2013 Components for smoke control systems Part 8: Code of practice for planning, design, installation, commissioning and maintenance.
[9] SCA Guidance on Smoke Control to Common Escape Routes in Apartment Buildings (Revision 3.1; July 2020)

will be able to maintain tenable conditions in that lobby in which someone will be able to safely await the arrival of an evacuation lift.

5.15. The smoke control for lobbies therefore has multiple purposes:

- To protect the stairway from the ingress of smoke.
- In the case of use as an evacuation lobby, to prevent heat and smoke from entering the lobby so that occupants can safely await the arrival of the evacuation lift.
- In the case of a firefighting lobby, to provide a safe access or retreat point for fire crews and to enable crews to approach a fire in reasonable conditions.

5.16. It is unlikely that some existing smoke control solutions in current guidance, such as the 1.5 m^2 automatic opening vent solution, will be appropriate to prevent the ingress of smoke into the lobbies and stairs. The more appropriate solutions are likely to be natural smoke shafts, or mechanical smoke extract from the corridors in accordance with BS EN 12101-3[10], or a pressurization system in accordance with BS EN 12101-13[11]. A specialist smoke control contractor should be able to support design teams to fulfil the required objectives but it should be considered carefully at what stage such a specialist is engaged and at what point the design is demonstrated to meet its performance criteria.

5.17. Therefore. to assist in achieving all the objectives in this paper, the smoke control system should extract away from the stairway, should not extract from the firefighting or evacuation lobby itself, and should prevent heat and smoke from entering either the stairway or the firefighting/evacuation lobby.

6. Objective 3 – Resilience and flexibility for firefighting

6.1. The fire strategy for a tall residential building should ensure that suitable resilience and flexibility is provided for firefighting. This should include appropriate access and facilities within the firefighting lobbies, with sufficient resilience and redundancy in the design. One method of achieving this would be by following a fire engineering framework such as that set out in BS 7974, although FRS staff may not be able to contribute to a qualitative design review (QDR) in all cases.

[10] BS EN 12101-3: 2015 Smoke and heat control systems. Specification for powered smoke and heat control ventilators (fans)
[11] BS EN 12101-13 2022 Smoke and heat control systems Pressure differential systems (PDS). Design and calculation methods, installation, acceptance testing, routine testing and maintenance.

6.2. To achieve this objective, FRSs should expect designers to demonstrate that:

a) If the building is 18m or above, both stairways are designed for firefighting shafts[12].

b) If the building is 18m or above, multiple firefighters' lifts are provided.

c) Fire main outlets are provided in each lobby, and the smoke control provisions support firefighting access and egress.

6.3. In terms of the design of new buildings, NFCC believes that this objective will assist designers towards satisfying the functional requirements of the Building Regulations, namely:

Access and facilities for the fire service
B5. (1) The building shall be designed and constructed so as to provide reasonable facilities to assist fire fighters in the protection of life.

(2) Reasonable provision shall be made within the site of the building to enable fire appliances to gain access to the building

Resilience of Lift Provision

6.4. Both evacuation lifts and firefighters' lifts should be provided in sufficient numbers of each to ensure that, if an evacuation or firefighters' lift is out of service (e.g. as a result of breakdown or maintenance), there is at least one that is still available for use from all areas of the building.

6.5. The provision of lifts within the design of the building should also be sufficient that an out of service lift does not mean that occupants have to seek out the alternative lift as their only other means of escape. Lift cores should be designed with a suitable level of redundancy to ensure that, where one lift is out of service, there is still sufficient provision for both evacuation and firefighting.

6.6. If there is insufficient resilience in the lift provision, those ultimately responsible for the safety of a building (the Accountable Person (AP) or Responsible Person (RP)) will need to implement contingency measures should lifts being out of service result in insufficient lift provision. For example, if no firefighters' lifts were available the AP/RP

[12] Design in this area may look similar firefighting shafts, although current guidance in this area does not provide ventilation which would suitable for use in an evacuation lobby. These shafts should be usable for both firefighting and evacuation.

may have to consider if it remains appropriate to occupy the high floors in a building, if firefighters are unable to effectively respond to an emergency.

6.7. In some FRS areas, firefighters will be in attendance in a very short space of time and may be able to utilise the firefighting lift within minutes of a call to the emergency services. It should also be remembered that the expectation of a building's design is that it should support all building users to leave when they chose to do so. Therefore, the design should ensure that occupants can choose to leave while firefighting is underway and, therefore, the lift provision should support them to do so.

6.8. There may be a suitable justification for dual purpose lifts, however, having in many circumstances only two lifts (e.g. two dual purpose firefighters and evacuation) may not be appropriate. In this scenario, if one dual purpose lift was out of service (i.e., through repair or maintenance), only a single lift would be available for the competing requirements of evacuation and firefighting. This could result in either firefighting (and potential rescue) being delayed to enable the lift to be used for evacuation, or firefighters utilising the lift which means it is no longer available for evacuation. Both of those scenarios can result in undue risk for either occupants or firefighters.

6.9. In many cases, therefore, depending on the building height and layout, the minimum expectation may be at least three lifts (at least one for evacuation, one for firefighting and one dual use for either firefighting or evacuation). There are advantages in making all three lifts dual use as long as they are appropriately signed and controlled, however, doing so will not justify lesser numbers of lift provision. Where lifts are grouped in a bank, the loss of one lift should not result in a situation whereby residents who need to use lifts should are left with only a single means of egress.

The Use of Lobbies for Firefighting

6.10. Firefighting lobbies are similar to evacuation lobbies but have increased fire resisting construction and additional firefighting facilities, such as rising mains (for firefighting water supplies), smoke control provision and firefighters' lifts. These are used as a staging point for firefighters to safely approach a fire in an adjacent compartment, and a safe retreat space to return to if required.

6.11. The current guidance (ADB and BS 9991) advocates the rising main outlet be placed within the stairway as the guidance does not provide for a dedicated firefighting lobby, but instead utilises the common corridor 'to act' as a firefighting lobby. However, as noted in this paper, all stairways/lifts should be protected by a dedicated lobby that does not serve other accommodation. Where the lobby functions as a firefighting lobby, there is the opportunity to locate the fire main outlets in this space, which allows firefighters to keep the stairway closed during firefighting operations if safe to do so. That provides fundamentally more robust protection to the stairway.

6.12. NFCC also believes designs should be updated beyond current guidance in order to incorporate fire mains that have a maximum minimum bore of 150 mm and a minimum of two rising main outlets at each floor level. This is to comply with DCLG FRS Circular 32/2006 which recommended that fire services should 'Adopt firefighting techniques that provide for an additional covering jet … to protect fire-fighting personnel actively involved in the incident/rescue/firefighting. It is important that this operational procedure is given the strongest consideration and adopted for all high rise incidents'.

Dual purpose lobbies

6.13. A lobby can, therefore, be designed for both firefighting and evacuation. It can have evacuation lift(s) and a smoke control system to enable the safe waiting for the arrival of an evacuation lift, and can have firefighters lift(s), firefighting facilities such as rising mains, and have a smoke control system to enable safe firefighting.

6.14. The dual use of these lobbies supports NFCC's view that all stairs in residential buildings should be designed as firefighting shafts, as building design should include evacuation lifts and suitable lobby protection.